THE LANCET.

No. 4640. Vol. CLXXXIII. LONDON, SATURDAY, AUGUST 3, 1912. Pp. 152.

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

INTRODUCTORY ADDRESS on the Integration of the "Social Organism." Delivered before the State Medicine Section, Congress of the Royal Institute of Public Health, Berlin, July 25th to 28th, 1912, by Sir T. CLIFFORD ALLBUTT, K.C.B., M.A., M.D.Cantab., F.R.C.P. Lond., F.R.S., Regius Professor of Physic, University of Cambridge..... 283

ORIGINAL ARTICLES.

Cases Illustrating the Value of an Examination of the Blood. By ERNEST H. SHAW, M.R.C.P. Lond., Director of Clinical Pathology, Great Northern Central Hospital; Consulting Pathologist, Hornsey Cottage Hospital.... 286

A Municipal Dispensary and Tuberculin Treatment. By A. MEARNS FRASER, M.D. Edin., D.P.H. Camb., Medical Officer of Health, Portsmouth; and HILDA CLARK, M.B., B.S. Lond., Medical Officer to the Municipal Tuberculin Dispensary, Portsmouth 289

The Treatment of Habitual Dislocation of the Shoulder-joint. By E. D. TELFORD, F.R.C.S.Eng., Assistant Surgeon, Manchester Royal Infirmary..... 293

Some Observations Concerning Syphilitic Sera. By CHARLES RUSS, M.B. Lond..... 294

Observations on the Neuron. By HARRY CAMPBELL, M.D. Lond., F.R.C.P. Lond., Physician, West End Hospital for Diseases of the Nervous System. III.—(*Illustrated.*)—(*To be concluded*)..... 324

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Note on a Case of Mericism. By JOHN D'EWART, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond..... 295

A Case of Cerebral Tumour Presenting an Unusual "Crossed Reflex." By E. B. GUNSON, M.D. Edin.—(*Illustrated*)..... 295

REVIEWS AND NOTICES OF BOOKS.

Diseases of Infants and Children. By Henry Dwight Chapin, A.M., M.D., and Godfrey Roger Pisek, M.D. Second edition 296

Modern Science and the Illusions of Professor Bergson. By Hugh S. R. Elliot..... 296

The Gateways of Knowledge: An Introduction to the Study of the Senses. By J. A. Dell, M.Sc. Vict. 297

Index of Practical Nursing. By J. Basil Cook, M.D. Vict., D.P.H. 297

Anleitung zur Funktionsprüfung des Ohres. (Prüfung des Gehör- und Gleichgewichtsapparates.) Für die Praxis dargestellt. Von Dr. A. Sonntag und Dr. H. J. Wolff..... 297

Dawn of the Health Age..... 297

The Six Cardinal Points and After; A National Medical Service..... 297

National Health Insurance, a Plain Exposition of the Act for Employers and Employed 298

The National Insurance Act Criticised and Reviewed in Plain and Popular Language 298

Guide to the National Insurance Act, 1911, with Notes and Index 298

The Journal of Hygiene 298

BRITISH MEDICAL ASSOCIATION

EIGHTIETH ANNUAL MEETING IN LIVERPOOL.

Commentary..... 299

Proceedings in the Sections:

Medicine: Dr. David B. Lees and others on the Diagnosis and Treatment of Early Cardiac Complications of Rheumatism 300

Surgery: Mr. W. Harrison Cripps and others on the Treatment of Carcinoma of the Rectum 301

Diseases of Children (including Orthopædics): Mr. H. J. Stiles and others on the After-results of the Major Operations for Tuberculous Disease of Joints..... 302

Electro-therapeutics: Professor E. Rutherford on the Chemical Action of the Radiation of Radium; Mr. Ernest H. Shaw on the Action of Radium and X Rays in Malignant Growths; Dr. N. S. Finzi on the Forms of Malignant Disease Benefited by Radium Treatment; Mr. W. Armstrong on the Therapy of the Radio-oxygen Bath; Mr. E. H. Howlett on the Standardisation of Radium Dosage..... 304

Anæsthetics: Dr. Felix S. Rood and others on Intravenous Infusion Anæsthesia; Mr. Alexander Wilson and others on the Importance of Affording the Anæsthetist an Opportunity of Making a Thorough Examination of the Patient some Days Previously to Operation and After the Nature of the Operation had been Disclosed..... 305

Medical Sociology; Dr. R. R. Rentoul on a Public Medical Service under Professional Control; Mr. H. A. Ballance on a Public Medical Service Scheme Established in Norwich in 1902; Dr. R. W. W. Henry on the Public Medical Service Recently Established in Leicestershire and Rutlandshire; Dr. M. Dewar on Reform of Out-patients' Departments of Hospitals..... 306

Neurology and Psychological Medicine: Dr. Percy Smith and others on the Neuroses and Psychoses of the Climacteric: their Prognosis and Treatment 308

Gynæcology and Obstetrics: Dr. W. S. A. Griffith and others on the Results of Treatment of the Inflammatory Diseases of the Uterine Appendages 310

Bacteriology and State Medicine: Dr. A. C. Houston and others on B. Coli, its Varieties, and the Significance of their Occurrence in Water-supplies 312

Anatomy: Sir William Macewen on the Development and Growth of Bone, Normal and Abnormal 313

Pharmacology and Therapeutics: Dr. A. Goulston on Dextrose in the Treatment of Certain Forms of Heart Disease; Dr. O. T. Williams on Cod-liver Oil and its Action in Phthisis; Professor C. R. Marshall on Clinical Experiences with Tetrahydropapaveroline Hydrochloride; Professor F. J. Charteris on the Comparative Value of Arsenious Acid and of Salvarsan in Blood and Other Non-syphilitic Diseases..... 314

Physiology: Dr. F. W. Mott and others on the Bio-physics and Bio-chemistry of the Neuron..... 315

The Annual Exhibition.—(*Continued*) 316

NEW INVENTIONS.

Continuous Drop Ether Bottle for the Administration of Ether by the Open Method.—(*Illustrated*)..... 317

Laryngeal Mucus Catheter.—(*Illustrated*)..... 317

LEADING ARTICLES.

THE NATIONAL INSURANCE ACT AND A STATE MEDICAL SERVICE 318

PRACTICAL EUGENICS 319

ANNOTATIONS.

The Academic Ideal in Medical Education 320

Rusty Hot Water..... 321

Epiphysitis of the Os Calcis..... 322

Municipal Dispensaries and Tuberculin 322

Old Towns and New Needs..... 323

Retinal Hæmorrhage in Purpura Hæmorrhagica 323

VITAL STATISTICS:

Health of English Towns..... 332

Health of Scotch Towns 332

Health of Irish Towns 332

SPECIAL ARTICLES.

The International Eugenics Congress 327

The Congress of the Royal Institute of Public Health ... 329

Royal College of Physicians of London: Meeting of Comitia 329

Central Midwives Board 330

Royal College of Surgeons of England: Meeting of Council 332

The Services: Indian Medical Service Examinations..... 333

Scotland 337

Ireland..... 338

Paris 338

Berlin 339

Italy 340

CORRESPONDENCE.

An Appeal to Sympathisers in Eugenics (Major Leonard Darwin, Mrs. S. Gotto, Prof. P. von Fleischl) 335

The Medical Profession and the National Insurance Act (Dr. Duncan Forbes) 335

Fleming's (Hechtis) Modification and the Wassermann Test (Mr. Arthur Davies, Dr. W. d'Este Emery)..... 336

The Ophthalmology of General Practice (Dr. Alexander Brown)..... 336

The Medical Directory (Messrs. J. & A. Churchill)..... 336

The Rarity of Sarcoma of the Rectum (Mr. C. Hamilton Whiteford) 336

The Rebate on Petrol Duty for Medical Men (Mr. F. Lockhart Mummery) 336

An Apology for Silenus (Dr. F. G. Crookshank) 337

"Wait and See" 348

THE NATIONAL INSURANCE ACT.

The Administration of Sanatorium Benefit 340

The County Medical Officer for London and the Insurance Committee for the County ... 340

A Public Medical Service for the Wandsworth Area 340

A Note on Sir William Plender's Report 342

The State Medical Service Association..... 342

MEDICAL NEWS.

London (Royal Free Hospital) School of Medicine for Women (University of London) 325

Middlesex Hospital Medical School 325

University of Edinburgh..... 351

Pass-lists of the Oxford University, Royal Colleges of Physicians and Surgeons of England, London School of Tropical Medicine, Victoria University of Manchester, and University of Bristol..... 342

University of Sheffield..... 343

Donations and Bequests..... 344

Medical Women and the White Slave Traffic..... 344

The Royal Free Hospital 344

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: The British Medical Association and the Insurance Commissioners.—The Mental Deficiency Bill..... 344

House of Lords: The Indian Sanitary Service 344

House of Commons: The Pyramount Sanatorium..... 344

Appointments 346

Vacancies 347

Births, Marriages, and Deaths 347

Notes, Short Comments, and Answers to Correspondents... 348

Meteorological Readings 348

Medical Diary 349

Acknowledgments of Communications received 350

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

ADLARD & SON:—
Fenwick .... Indications for Widely Resecting the Bladder Walls ..... Cover 1

BAILLIERE, TINDALL & COX:—
Bidwell .... Intestinal Surgery ..... Cover 1
Campbell.... Treatment ..... Cover 1
Clarke, E. .. Errors of Accommodation and Refraction of the Eye .... Cover 1

BALE, SONS & DANIELSSON:—
Moullin .... Inflammation of the Appendix ..... Cover 1
" .... Treatment of Gastric Ulcer ..... Cover 1

CHURCHILL, J. & A.:—
Cripps ..... Cancer of the Rectum.. 5
" ..... Diseases of the Rectum 5
Fenwick .... The Value of Radiography ..... Cover 1

FROWDE AND HODDER & STOUGHTON:—
Bidwell .... Minor Surgery.. Cover 1
McCann .... Cancer of the Womb, &c ..... Cover 1

GLAISHER:—
Herschell .. Chronic Affections of the Stomach .. Cover 1

GRIFFIN & CO.:—
Caird & Cathcart .. Surgical Handbook.... 6

LEWIS:—
Campbell.... Headache ..... Cover 1
" .... Flushing, &c. .... " 1
" .... Difference in Nervous Organisation of Man and Woman .. Cover 1
Moullin .... Enlargement of the Prostate ..... Cover 1
Roth ..... Lateral Curvature of the Spine ..... Cover 1
Tilley ..... Diseases of the Nose, &c. ..... Cover 1

LONGMANS, GREEN & CO.:—
Hare ..... Food Factor in Disease, &c. ..... Cover 1

MACMILLAN & CO.:—
Ballance .... Cerebral Decompression in Ordinary Practice.. 5

MEDICAL PUBLISHING CO.—
Lane ..... Operative Treatment of Fractures 6
" ..... Cleft Palate and Hare Lip 6

NISBET & CO.:—
Lane ..... Treatment of Chronic Constipation 6

REBMAN:—
Archives of the Roentgen Ray 5

SAUNDERS COMPANY:—
Cotton ..... Dislocations and Joint Fractures 3

SAUNDERS.—(Continued).
Crandon & Breasfried Surgical After-Treatment 3
Murphy's Clinics ..... Cover 1
Murphy's Clinics 3

WRIGHT & SONS (Bristol):—
Begg ..... Sprue 5
McKail..... Public Health Chemistry 5

MEDICAL LIBRARIES, &c.:—
Beasley & Ketley—Stammering 6
Behnke—Stammering 6
Flexner—
Report to the Carnegie Foundation ..... Cover 1
Joseph, Bexhill-on-Sea—
Phonographic Literature 75
Matthews Bros.—
Wood - Application of Trusses .. 5
Norwood Sanatorium—
Hare - Inebriety ..... Cover 1
Squire's Companion ..... Cover iv
" London Hospitals.... " iv

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Beckett Hospital, Barnsley 70
Borough of Barrow-in-Furness 71
Borough Hospital, Birkenhead 69
Brixton Dispensary, Water-lane 70
Cardiff Education Committee 70
City of Birmingham 71
City of Liverpool Infectious Diseases Hospital 71
City of London Hospital for Diseases of the Chest 71
County and City Asylum, Powick 72
Coventry and Warwickshire Hospital 71
Croydon General Hospital 71
Darenth Industrial Colony 72
District Infirmary and Children's Hospital, Ashton-under-Lyne 70
Down District Lunatic Asylum, Downpatrick 70
East Sussex Hospital, Hastings 71
Elder Dempster & Co. 73
Essex Insurance Committee 72
Govan District Asylum, Crookston .. 72
Haywood Hospital, Burslem 73
Hull Royal Infirmary 70
King Edward VII. Welsh National Memorial 72
Liverpool Hospital for Consumption Sanatorium 72
Lurgan Union Workhouse and Fever Hospital 70
Macclesfield General Infirmary 73
Manchester Hosp. for Consumption.. 72
Manchester Northern Hospital for Women and Children 72
Middlesex Education Committee 72
Mildmay Mission Hospital, Bethnal Green 71
Nottingham General Dispensary 71
Nottingham General Hospital 71
Perth District Asylum, Murthly..... 73
Queen's Hospital for Children 70
Ramsgate General Hospital and Dispensary 71
Royal Devon and Exeter Hospital.... 70
Royal Infirmary, Sheffield..... 70
Royal Isle of Wight County Hospital 73
Royal Naval Medical Service 70
Royal Victoria Infirmary, Newcastle-upon-Tyne 70
Royal Victoria and West Hants Hospital, Bournemouth 71
St. Mary's Hospital for Women and Children, Plaistow..... 72
St. Thomas's Hospital 69
Scarborough Hospital and Dispensary 71
Sheffield Royal Hospital 70
Somerset County Council 72
South Devon and East Cornwall Hospital, Plymouth 71
Southport Infirmary 69
Staffordshire County Asylum, Stafford 71
Stockport Infirmary 69
University of Sheffield 69
Walsall and District Hospital 71
Warneford General Hos., Leamington Spa 71
West London Hospital 72
York County Hospital 70

ASSISTANCIES, MEDICAL:—
Arnold & Sons, Giltspur-street 73
Fox 91, Hillings, Knightsbridge 73
Liverpool Medical Agency 73
No. 919, L.O., Strand..... 73
No. 920, L.O., Strand..... 73

ASSISTANCIES—(Continued).
No. 923 L.O., Strand..... 73
No. 924, L.O., Strand..... 73
No. 925, L.O., Strand..... 73
No. 926, L.O., Strand..... 73
No. 927, L.O., Strand..... 73
No. 928, L.O., Strand..... 73
Scholastic, Clerical, &c., Association. 73
Sumner & Co., Liverpool 73
Turner, Adam-street 73
Z. J., 858, Leadenhall-street 73

ASYLUMS, HOMES, &c.—
Armadale, Kingsgate-on Sea 69
Ashwood House, Kingswinford 65
Association of Medical Men Receiving Resident Patients 69
Balyaughrin Sanatorium, Portpatrick 69
Barnsley Hall, Bromsgrove 65
Barnwood House Hospital 64
Bishopstone House, Bedford..... 65
Brunton House, Leicester..... 69
Buntingford House Retreat, Buntingford 66
Camberwell House, Peckham-road .. 65
Cheadle Royal 65
Clarence Lodge, Clapham-park 64
Coltshurst House, Warford..... 65
Coppice, The, Nottingham..... 64
Crooksbury Sanatorium, Surrey 66
Croydon Mental Hospital 62
Cullum, North Pinchley 69
Dairympie House, Rickmansworth .. 66
Dartmoor Sanatorium 67
David Lewis Colony, Alderley Edge.. 65
Dinsdale Park, Darlington 64
Ghyllwoods 66
Grove House, Church Stretton..... 64
Grove, The, Catton, Norwich 64
Haslemere Nursing Home..... 69
Haywood Lodge, Newton-le-Willows.. 65
Helgham Hall, Norwich..... 63
Hendon Grove, Hendon 65
Home for Epileptics, Maghull 65
Invernith Lodge Sanatorium, Colinsburgh 65
Johnston, Cambridge 66
Kingstown House, Soar 65
London Fever Hospital 64
Malling Place, Kent 64
Malvern Hydropathic 63
Manna Mead, Blackheath 69
Melbourne House, Leicester 19
Meyrick, Brighton 66
Middleton Hall, Co. Durham 65
Moat House, Tamworth 64
Mount Pleasant, Wanstead 69
Mount Vernon Sanatorium, Northwood 67
Newmains Retreat, Lanarkshire 66
Nordrach in Wales Sanatorium 67
Nordrach-on-Dee, Bnachory 67
Northumberland House, Finsbury-park 65
Northwoods House, Winterbourne .. 65
Norwood Sanatorium, Ltd. 66
No. 770, L.O., Strand..... 69
Ossa Island, Heybridge 65
Peckham House 65
Plympton House, South Devon 64
Portsmouth Corporation Mental Hospital 64
Raeburn Sanatorium, Northallerton.. 66
St. Andrew's Hospital, Northampton 64
St. Luke's Hospital, M.O. 65
Shaftesbury House, Formby-by-the-Sea..... 65
Springfield House Private asylum, Bedford 64
Stocker, Craven-street 69
Stretton House, Church Stretton 64

ASYLUMS—(Continued).
The Grange, Rotherham 63
Vale of Clwyd Sanatorium..... 67
Warneford Asylum, Oxford 63
White Lodge, Beltinge 69
Wye House, Buxton 64

FINANCIAL, &c.—
Equitable Reversionary Interest Soc.. 80

HEALTH RESORTS, BATHS, &c.:—
Alexandra Therapeutic Institute 62
Assouan and Luxor..... Cover iii
Bad Landeck..... 66
Leysin, Switzerland 68
Peebles Hotel Hydropathic 68
Plombières 66
St. Beatenberg 66
St. Joachimsthal..... 66
Smedley's, Matlock 62
Spa, Belgium 68
White Lodge Private Hydro 62
Woodhall Spa Baths, &c. 67

HOTELS:—
Knowle Hotel, Sidmouth 62
Prospect Hotel, Harrogate 69
White Hart Hotel, Margate 62

HOUSE & ESTATE AGENTS:—
Cristofoli, Swindon 74
F.R.C.S., New Cavendish-street 74
Ley Clark, Wimpole-street 74
CONSULTING-ROOMS:—
35, Harley-street 74
No. 921, L.O., Strand..... 74

LIFE & FIRE ASSURANCES:—
Lloyd's Special Motor Policy 75
National Provident Institution 80
Prudential 80

MASSAGE:—
London School of Massage 81
McCarthy, Drayton gardens..... 81

MEDICAL ACCOUNTANTS &c.—
Turner 74

MEDICAL AGENTS:—
Blundell & Rigby 78
Fieldhall, Limited 78
Manchester Clerical, &c., Association. 76
Manchester Medical Agency 76
Medical Agency 78
Moore & Co. 75
Needes, Herbert 76
Needes, J. C. 78
Peacock & Hadley 78
Scholastic, Clerical, &c., Assoc..... 79
Turner 77

MEDICAL SCHOOLS:—
(LONDON.)
London Hospital Medical College and Dental School 57
London School of Clinical Medicine .. 57
North-East London Post-Graduate College..... 59

MEDICAL SCHOOLS—(Continued).
St. Bartholomew's Hosp. and College. 55
St. Mary's Hospital Medical School.. 56
West London Post-Graduate College.. 59
(PROVINCIAL, &c.)
Anderson's College Medical School, Glasgow 58
Glasgow Royal Infirmary..... 59
University of Birmingham..... 59
University of Durham College of Medicine, Newcastle-upon-Tyne.... 58

NURSING INSTITUTES:—
General Nursing Association 61
Hospital for Sick Children, Great Ormond-street 61
Leeds Trained Nurses' Institution.... 61
London Nurses' Association 62
Male Nurses Temperance Co-operation 61
Mental Nurses Co-operation 61
National Hospital Male Nurses' Assoc. 61
New Mental Nurses' Co-operation.... 61
Nurses' Co-operation, Portland-place.. 61
Registered Nurses' Society 60
St. John's House 61
St. Luke's Hospital, R.O. 62
Temperance Association of Male Nurses, Ltd. 61
Temperance Male Nurses Co-operation 60
The Retreat, York 62

OFFICIAL NOTICES:—
City of London Lying-in Hospital 58
College of Preceptors 56
Guy's Hospital 66
Henry Saxon Snell Prize..... 67
Hospital for Sick Children 59
Institute of Hygiene ..... Cover 1
Institute of Hygiene..... 7
King's College, Strand..... 57
London Hospital 67
London Post-Graduate Association .. 56
Medical Graduates' College, &c..... 55
North-East London Post-Graduate College 55
Queen Charlotte's Lying-in Hospital . 58
Royal College of Physicians of Edinburgh, &c. 59
Royal London Ophthalmic Hospital.. 59
St. Bartholomew's Hosp. and College. 55
Throat Hospital, Golden-square 56
West End Hospital for Diseases of Nervous System 67
York-road General Lying-in Hospital, Lambeth 56

PARTNERSHIPS & PRACTICES —
Arnold & Sons, Giltspur-street 74
Holmes & Co., Mortimer-street 75
Manchester Clerical, &c., Assn. 73
M. C. W., Bristol 74
No. 917, L.O., Strand..... 74
No. 922, L.O., Strand..... 74
Scholastic, Clerical, &c., Association . 74
Turner, Adam-street 73 74

RAILWAY & STEAMSHIP CO.'S —
Albion S.S. Co.—Trips to Norway.... 60
New Zealand Shipping Co..... 60
R.M.S.P.—Yachting Cruises de Luxe. 60

TUTORS & LECTURERS:—
Behnke 59
Gemmell 60
Med. Corres. Coll 60
No. 448, L.O. .. 75
No. 918, L.O. .. 59
Sch mens 6
Weymouth 58

For Index to Trade and Miscellaneous Advertisements see page 4.

Introductory Address

ON THE

INTEGRATION OF THE "SOCIAL ORGANISM."

Delivered before the State Medicine Section, Congress of the Royal Institute of Public Health, Berlin, July 25th to 28th, 1912,

BY SIR T. CLIFFORD ALLBUTT, K.C.B., M.A., M.D. CANTAB., F.R.C.P. LOND., F.R.S.,

REGIUS PROFESSOR OF PHYSIC, UNIVERSITY OF CAMBRIDGE.

GENTLEMEN,—The subject and purpose with which this department of our Congress is to occupy itself, the great department over which you have to my honour called me to preside, extend not only far beyond those of Reparative Medicine, but are also of far wider reach than Preventive Medicine. They pretend to a scope no less than the integration of, what I may be permitted to call, the "Social Organism."

THE SOCIAL ORGANISM

may have a soul of its own, certainly it has a body; to the development of this body, and to the cohesion of its parts, we are here to devote our attention. Without an efficientbody its soul or psychical issue must be comparatively barrenor evil. And an efficient body does not mean, or does not mean only, a body charged with particular capacities or visions, however rare; it means also an integration of all essential parts, and an elimination of all inessential, depraved, and parasitic elements. Every part or function not contributing its full share to the universal function, and every alien ingredient, hinders, if it does not pervert, the whole. Moreover, every small centre of activity, every eddy of function, effectual as in its narrow orbit it may be, yet falls short of its design if it does not also in its degree play into the concert of the whole. Every individual genius, as history shows us, must, if it is not to be wasted, merge itself in the general will and understanding. Now let us ask ourselves, in Germany or England, I make no comparison, Is it thus with our social bodies? Have we no alien ingredients, no self-centred activities, no inharmonious wills, no masses of unorganised, marred, or depraved parts which pervert and hinder the universal function? Are our collective energies not dissipated by internal collisions, and frustrated by maimed members and unwholesome elements, so that social action is thwarted and social inspiration impoverished? The problem with which this section has to concern itself is this: How can a social body store most energy most economically, and use it most fully and effectually, and to the highest ends? This is the *Scientia vitae civilis.*

It is the prophecy of our own time that we shall develop to the utmost both the state and the individual; happily neither implies the sacrifice of the other. In the past, War, one of Nature's wasteful methods, was the rough means of cementing tribes together; but this unity was gained by casting and trimming every individual person and will to one mould. The heretic or intractable person was hammered into shape or burned. We have now learned that War, if by it at certain phases of society certain disciplines have been inculcated, is wasteful both to victor and vanquished; it ruptures strands which are vital to the reciprocating functions of state with state, and it stereotypes caste distinctions. We can make a better kind of comradeship. Almost in spite of themselves modern states are becoming knitted together by mutual economical functions, and this must lead to closer and deeper sympathies, to common work for the benefit of all, and to mutual national sympathies. It is our present business to show that the same ends of discipline, the same fervent comradeship, can be gained and enhanced by more economical means; the development of the individual himself can be nurtured better and better by his reinforcement from the whole, by give-and-take between himself and his world, than by spinning in a corner. The interests of the individual will be enriched and multiplied when continually interpreted *sub specie civitatis.*

RELATIONS OF INDIVIDUAL AND STATE.

Now, to compass both the efficiency and the coöperation of the individual in the State, two chief methods are in use: spontaneous growth, and what I may call "drill." In England we rely, somewhat in excess it is true, on spontaneous growth; in Germany you rely, also perhaps in some excess, on discipline. The right method lies somewhere between us. We may fail to produce our organic growths in due time, you may rely too much on the manufactured article. By organisation you have done more than Englishmen, in their instinctive sense of the infinite complexity of things, are willing quite to own; we on our side have done more, I think, than is quite appreciated by our tedious and empirical waiting on growth and season, though we have lost no little by our corresponding distrust of general principles. The State must always be ahead of the individual, in Germany, perhaps, too far ahead of him: we are not forward enough; though during the last few years we have been making haste and, we hope, speed. But the desire of each nation must assuredly be to put its trust not in the imposition of systems, but in the evocation of life.

These considerations lead us to reflect that in the modern state we are passing away from the dictatorial to the sympathetic stage, to the integration of wills. The more complex our external conditions—and verily they are becoming strangely complex—the more we depend upon ready and subtle readaptations from within. In this consists the solution of the apparent conflict between the freedom and the service of the individual; I had almost said between freewill and determinism. As Acton says, the guardian of rights is becoming the guardian of duties. If we throw a boy into the water who cannot swim he is free enough, but with a freedom making for death; the boy who can swim is under discipline, but yet with an ordered freedom which makes for life. In saving himself he can save others also. Happily it is by ordered common methods and capacities, and by fusing them in the whole, that the individual comes to the highest and best of himself, and therein wins his perfect freedom. By symmetrical and harmonised multiplicity the highest selves will be realised.

The key then to open the secrets of modern problems is no longer the key of unrestricted competition between individuals, an ataxic competition. And, in considering the principles of health, we have to apply to them the touchstone not of individual against individual, as too commonly we do, but of State against State; and, as I have said on a former occasion, that state will be the best which consists in the greatest number of sympathetic individuals. "La justice est le droit du plus faible." The emotion of group unity—"choric emotion" as it has been called—is the soul of the social organism. Individual truths merge into social truths, and in Hegel's words, our ascendency over the Middle Ages is in this, that we are rising from individual to social conscience.

Abstract as these remarks may seem to be, and indeed are, they are intended to lead up to a clearer conception of the modern needs in our reflections and in our decisions for the public weal. We are to consider the individual *sub specie civitatis;* and to believe that the best state must be that which consists in the greatest number of sympathetic persons. In our internal affairs we shall no longer be guided by principles of unmitigated individual competition. I repeat that competition is now less between individuals than between States, between the several social organisms; and that State will survive which has the strongest internal coherence, the freest play among its units and the readiest sensitiveness to readjustments. And, gentlemen, to compass this is largely our business; indeed, if we fail, no superstructure, no higher issue of a corporate conscience, can be created. It is upon our work that it must be built. When, then, we look upon defective or destitute persons we shall not talk harshly of elimination of the unfit, for we know that harshness is incompatible with social sympathy, that is to say, with social coherence, social sensitiveness, and quick social responses. It is inconsistent with the most efficient social organism, to the idea of which all such problems shall be referred.

PROBLEMS OF HEREDITY.

But it may be said, it is said, that we are as nature made us; that nature proceeds by harsh methods, and these modes of elimination are inherent in the dispensation under which we have our being—as person or state. But surely all human progress has consisted in recasting natural conditions, in

converting the crude materials of nature into higher combinations, in subliming her grossness into more ethereal spirit. For instance, if we withstand the temptation to leave our garden under the plough of heredity, and reflect on what is going on around us, we shall see that many things are coming about in a few years, by sympathy and the social soul, that by heredity could have been compassed only by the waste of generations. We were told on one hand that only by the slow eliminating process of the ages could persons who craved for alcohol be weeded out; yet what are the facts? In the span of my lifetime the social conscience has done more to weed out drunkenness than many a generation of the hereditary plough. For we inherit not form only; we inherit also the law of organic memory, a capacity of making habit; and this capacity in every man by the pressure and conventions of the social hive can be redirected and reinforced in geometric ratio. How long does it take to convert an English or a German stock into an American? May not the same kind of disinterested motive and of formative memory do more than heredity to deal also with cripples, paupers, culprits, and moral and physical incurables of many sorts, and do it more quickly? We shall care, nay, since the dawn of Christianity we have cared, for the weak instead of eliminating them, under the instinct, which reflection is making clearer to us, that thus we are promoting the social coherence by which the survival of a nation is to be established.

Again, as regards the spectre of heredity, when I was a young physician we were forewarned that by stamping out scarlet fever, by isolating these patients, we should indirectly cultivate a race of children without inherited immunity to this disease, and that our last state would be worse than the first. What has happened? In those days scarlet fever, in its various modes, was one of the most malignant of infantile diseases; it scourged household after household, sometimes sweeping away a whole family of children. What is it now? A malady so mild that, but for the hazard of renal disease, it would be almost negligible. I do not stay to puzzle over this, and I have no answer for the riddle. I merely urge that these problems of heredity are as yet far too complicated and dark to guide us in prediction, and are especially to be mistrusted when we are admonished to pay regard to their menaces in despite of sympathy with all our fellow citizens.

At present, gentlemen, in your country and in mine we are much exercised how to deal with the feeble-minded, and we have now before us in England a Bill for the purpose. It is not for this Congress to forget for one moment the tremendous force of heredity in the propagation of varieties of nervous structure. But what do we mean by feeble-minded? The term is a bad one, for it signifies not an inherent and irremediable form only, it covers also degrees of disability which may be, and often are, due to incidental circumstances. Not long ago I watched a procession of unskilled labourers on what is sadly called a "hunger march," a march of protest against penurious wages. It was a grievous spectacle! The men were defective, so far as the observer might judge from their appearance, both in body and mind; slovenly in gait, mean of feature, hopeless in countenance. But do not let us flatter ourselves that heredity had done all this, had irremediably stamped its type upon these men from the cradle. We had at least helped to do it, society was largely responsible for it. I am not blaming any part or organ of society; I merely say that these undergrown and shambling men had been ill-nurtured, probably as children pined for food; and a starved body makes a starved soul. We are not yet in a position to assert that these casual labourers might not have been as comely and as manly as any other congregation of men had they but enjoyed the same advantages of nurture. We are not in a position to deny this because the experiment has not been well tried. Can it be tried? We are assured again and again by responsible persons who visit the schools for "waifs and strays" that by nature these are material as good as an equal number of boys from any other rank of society. The lives of great men, of men who have led the world, tell us that they have not come of this rank in life or that, but that they have sprung up at hazard from any social stratum. Moses was a waif, but a waif nurtured in the house of a humane princess. In Germany, I doubt not, as in England, your great men have come alike from hall and from hut; from poverty often, though from destitution rarely or never. House, feed, and teach the children decently, and we shall find geniuses, if history is to be our guide, in all conditions of men. When to all children we have given a fair chance then we may see what we have to fight with in heredity; as things are, we have in this plain way travail enough to keep us employed for a long future.

IMPERFECT MENTAL DEVELOPMENT.

Yet, when we have realised this, it is true notwithstanding that there are, not among the poor especially, but in all classes of society, a certain number of children born short of capacity—incomplete persons. In them the brain, or some other organ essential to its growth, is arrested at a stage short of the fulfilment of development. It is not that the promise of structure is starved or depraved, but that in respect of the common type growth itself had stopped. Here we have to deal not necessarily with feebleness of mind but with arrest of mind. These modes and degrees of arrest the psychologist is now better and better able to detect and to classify by scientific methods, methods by which he can instruct the practical physician. Persons thus arrested or distorted in mental growth must be cared for by special provision; and as these arrests, like other structural peculiarities, are very transmissible, such defectives, especially the flighty young women who are open to infamous abuse, ought to be placed under tutelage and not exposed to occasions of propagating their kind. But in such tutelage nothing should be done to violate the sentiment of sympathy; in proportion as their animal affections are discouraged their humaner affections should be cherished. It is for you to say how this is to be done, but surely not by farther maiming of the stunted body. When, meanwhile, we have taken the plain and open way of nurture, education, and family love, the margin of original defectives will be so far reduced as to make things easier for us. Still, with not a few of them we shall no doubt be left face to face with the stamp of heredity, and the glimpses we have of its secret and mazy laws are not yet such as to throw much light on their signs and their processes. Eugenics is yet, as regards mankind, but an infant, an infant needing the very nursing which we want for the slum babies. I am sure that you will use all your influence to promote research in this vitally important branch of science.

For my part, no consultations make me feel my ignorance and ineffectualness so much as those concerning the marriage of persons in whose families instances of insanity have occurred. I have always before me the dread of sacrificing the peace of two lives, assuredly made for happiness, to eugenistic conjectures; for those who know most of the subject warn us that as yet eugenics, at any rate as regards man, is in the earliest stage of its experimental career. We are as yet far indeed from prediction. Some of the happiest marriages I have known were on account of a family taint of insanity entered upon with grave anxiety. On the other hand, calamity often befalls those who had no great reason to anticipate it in this kind. But this is not the place to discuss insanity or laws of heredity; let it suffice to say that mental instability often consists less in flaws or defects than in a disproportion of constituent faculties, some of which may indeed be too quick and apprehensive for the balance of the system. Thus a slight rearrangement of those faculties in the offspring may issue in more stable function and enhanced capacity. The curious relationship between genius and insanity must not be forgotten, nor again the uncertainty of the outcropping of the eccentricity. About all these laws we are much in the dark, and one genius will compensate us for many an eccentricity. One of these laws, as apprehended by Dr. Mott, by an advance of precocity in each succession, would work out a radically insane stock in a few generations. Concerning the alleged positive increase of insanity in our own day I confess myself sceptical.

EFFECTS OF BAD HOUSING AND INSUFFICIENT FOOD.

On tuberculosis again, I will not dwell at length; my honoured colleagues will deal with it exhaustively. The susceptibility to tuberculosis may depend, not on some vague disposition of the whole constitution, but on defect of some organ responsible for secreting an antidote to it; and this defect may well be hereditary. Can we find such a part, and how to invigorate it? As regards external conditions I am more and more convinced that the dominating cause of this plague is bad or defective housing. These faults a

compulsory notification will declare. For a sad account of such overcrowded and damp dwellings, as also of insanitary school buildings, I may remind you of a paper by Jacob in *Tuberculosis* for June, 1911. Professor Baginsky has pointed out the same effect of bad housing in respect of summer diarrhœa. It would seem, indeed, that country in this respect is worse than town. Children too often arrive at school in wet clothes, and with resistance so lowered by improper or scanty feeding and want of sufficient sleep that they are apt victims for that crippling disease rheumatic fever. The home cookery in England has deteriorated much of late years, the old traditions of housekeeping having waned; yet in the main poverty is at the bottom of these evils; and of what sense is it to preach fresh air to people who have not the means to buy the extra food and blankets which fresh air requires? Now, you must say if it is true, as John Mill many years ago declared, that "poverty, in any sense implying suffering, may be completely extinguished by the wisdom of society and the good-will and providence of individuals." None know better than the physiologists in this audience that if any part of the animal body lies outside the due irrigation of the nutritive fluids, that area becomes, not only useless to the body, but also prone to engender a putridity which will infect even the soundest and sweetest parts of the system. Thus will the atrophy of any one class of the people infect the rest of the social body.

And, to turn again to the children, there is an outward and an inward starvation. The starvation, which at first is an outward deprivation of food, after no long time becomes an internal starvation, because the organs of digestion themselves dwindle, and cease to be fit ministers of nutrition. This creates inward hunger, and inward hunger leads to perversities of the nutritive processes. Graziers tell us that if a young animal be pined till it has lost its "calf's flesh," this loss can never be wholly made up. When the units of the frame have taken too soon their permanent shape and set, the proportions of these units cannot afterwards be much altered, whatsoever the later enrichments of the food. Permit me to quote to you the following extract from the Bulletin of the Chicago School of Sanitary Instruction, written in the quaint American fashion: "There is no greater educational need than that of How to take care of baby ..... The old-fashioned way won't do! Conservatives argue that in the good old times it was a case of the 'survival of the fittest'; progressives can only see in it the 'survival of the luckiest.' ..... The baby wants a square deal. It will be a long time before it gets all that is coming to it. ..... Be a progressive—*on the baby question*."

We have also to consider in this section if the diminution of births, whatsoever its causes, is the terrible misfortune which we almost passionately suppose it to be. If parents produce more children than they can well feed, and educate well, is it not both family and social wisdom to feed better and educate better a smaller number? What is the use to society of producing crowds of puny children to be sacrificed to the Moloch of disease—to tuberculosis, to summer diarrhœa, and so forth. To bring forth fewer children, and to do well by them, seems a better part of wisdom. For the rearing of men useful to the community, as I have said, it seems to matter little out of which social stratum the children come, if the children born be duly fostered. Those conversant with the wage-earning classes, as in working men's colleges, tell me that learning and knowledge vary with class and opportunity, but that original ability and capacity are the peculiars of no class. We must humbly admit that of all ranks of society 75 per cent. are common-place people.

A portentous evil in modern cities is the segregation of the more affluent from the poorer classes, the long and monotonous streets of the poor being in a separate quarter from the residences of the rich, so that what must be one society is cleft in twain. In England, at any rate, this evil is increasing; in London the ravine is becoming an abyss, social sympathies are severed, and social unity is undermined.

An Appeal for the Children.

The spirit of my appeal, then, to you my colleagues, is for the children. I do not ask you to give them a State stepmother; children need family love as well as good food, air, and sleep. They need love as a seedling needs the sun, and only under love and sympathy do they put forth their little curiosities and joys. To improve the home, then, is the crying want of our people both in town and country; by improving the houses we can do more to breed up children to make in their turn good fathers and mothers—parents thoughtful, temperate, forbearing, patient, loving. And immediately after the home comes the school. We want a higher and humaner standard for our teachers, and by liberal stipends to attract into our elementary schools the very best of our men and women. We cannot all be Montessoris, but to be a schoolmaster or schoolmistress ought to be the most honoured of vocations; and no money spent in securing such service would be lost to the nation, for the child is at the plastic period of its life—at this age it is infinitely plastic; and every university professor, although dealing with older babies, knows that it is for him to teach the beginners, to give its early impress to the still plastic frame; competent demonstrators for older students are more easy to find. Moreover, we want more outdoor schools. In my neighbourhood of Cambridgeshire I often see, as I pass through the villages, the children around the teacher in the playground or in a meadow near by. And it is more than a pretty sight; it makes for health and character, and leads to what I must briefly allude to as Nature studies.

There are sinister whispers abroad that the compulsory congregation of children of various classes in State schools has done not a little harm to youthful morals. This is probably more true of cities than of the village. Little rogues of both sexes, nursed in the gutter, are set side by side with the children of decent people, and these may learn from them habits apt to undermine the most carefully nurtured. It is of all things most precious then that, beside school clinics, the ennobling influence of high-minded teachers should penetrate the schools and create in them an atmosphere of purity and honour, as well as a standard of scholastic acquirement. *Anima pura in corpore puro.* It is true that in all classes of society perverse and vicious children crop up for whom special discipline must be provided; but it would be disastrous to confound with these children who are merely odd or eccentric, or even unruly. Unruly children often turn out in later life masterly and adventurous men.

Thus it is that ethical, medical, and social influences interpenetrate each other, and that we can hardly discuss any one of them without involving the others. The observance of the Sunday, whatsoever the religious standpoint, is an instance of this complexity. Is it not for the health of the social body that one day a week should be set apart not only for mere rest, but also for a change of thought and scene to matters deeper than our common daily avocations?

Concluding Remarks.

There is one more matter to which I desire to call attention, as it bears heavily on public health—that is the frequent dislocations of employment by revolutions in commercial methods. The carpenter is thrown out of employment because of the cheaper manufacture of doors and windows in countries where unlimited water power lies beside unlimited forest. This cheapness is beneficent, because it helps to provide better housing for our labourers; but during the transition the carpenter, by no fault of his own, is thrown out of work. The same mischance now befalls the cabdriver during the establishment of the motor carriage, and so forth; only too abundantly. It is hard to see what remedy is to be found for such dislocations, mischievous and cruel as they are, but they deserve your anxious consideration. It is a maxim of health that he who ploweth shall plow in hope. Our main duty—that for which these congresses are convened—is to discover and to propagate knowledge; reason, like the social organism, is an arm of survival; without passion and enthusiasm, it is true, we can do nothing, but in the long run it is knowledge which wins. Knowledge, organised knowledge or science, is now calling in question all traditional values, and among them it appreciates and treasures history, even the contents of folklore and cosmogonies, for without background and perspective we, "measuring ourselves by ourselves and comparing ourselves among ourselves, are not wise." By knowledge fictions and prejudices are having a short shrift, yet notwithstanding in medicine, public or reparative, we have many a long furrow to till. Although

we cannot hope to banish death or even suffering, yet as preventive medicine gains repute and strength life will be prolonged, suffering assuaged, and we shall approach more and more nearly to the perfect man in the perfect state, or rather to the ideal state typified in the perfect man. But we cannot rescue medicine from the oppression of evil social conditions and from foolish social neglect until public opinion is fully enlightened upon these fundamental and architectural principles of public health on which I have ventured, however crudely and however cursorily, to touch. When the public understanding is fairly reached the truth will be realised—the truth on which I have again and again insisted—that until the various and manifold conditions, powers, and ministrations, which we are gathered together now to discuss, are coördinated for each nation in a Ministry of Health no solid advance will be made.

Then what meanwhile can these congresses effect? This, above all things: they can direct and encourage research and they can create and represent ideas. Now "ideas," as Acton—that great man, both yours and ours—says, "are not the effects but the causes of public events." "Revolutions," he adds, "strange to say, explode not on particulars but on general abstract ideas." And yet how widely extravagant some of these explosive ideas have been—ideas without knowledge. Still, they have always contained a well-spring of truth or they would have died early. Hitherto the revolutionary ideas have been in the spheres of religion and politics; they may now be coming in the sphere of economics. If so, may we be ready to meet them, for half of them must be more or less directly medical; they must be founded upon the ideas of public health and the means of its maintenance. I wonder if in our time the "minimum wage" is to prove one of these abstract but explosive ideas? Biology and sociology of late years have made enormous progress; they are intimately intricated one with the other, and singly and severally are enormously complicated. And we shall only too easily remember that we are far from the meridian of our knowledge on these matters, pressing, even explosive, as they are. In the words of Emerson, we are as yet but at the morning star and cock-crowing. We may be compelled to act beyond our knowledge, this is sure to be; the more reason for us to urge on our mission of enlightenment. Happily, if this be the most material of generations it is also the most sympathetic, religious, and free; the best endowed of all generations yet, both in knowledge and humanity for the correspondingly arduous task before it. But, after all, concerning public health, may I conclude with a memorable sentence of Plato: "The modest pilot is able to reflect; and he is aware that he cannot tell which of his fellow-passengers he has benefited, and which of them he has injured in not allowing them to be drowned." ..... "O! my friend, I want you to see that the noble and the good may possibly be something quite different from saving and being saved. He who is truly a man leaves all that with God, and considers in what way he can best spend his appointed term."

CASES ILLUSTRATING THE VALUE OF AN EXAMINATION OF THE BLOOD.

BY ERNEST H. SHAW, M.R.C.P. LOND.,
DIRECTOR OF CLINICAL PATHOLOGY, GREAT NORTHERN CENTRAL HOSPITAL; CONSULTING PATHOLOGIST, HORNSEY COTTAGE HOSPITAL.

MY object in bringing before you the following communication is to demonstrate by records of actual cases the value of an examination of the blood in aiding one to arrive at an accurate diagnosis of the disease from which the patient is suffering. I think you will all agree that a correct diagnosis is essential in order that you may carry out the treatment most advantageous to the patient. It also enables you to give an accurate prognosis in a given case. By blood examinations I mean (*a*) blood counts and estimation of hæmoglobin; (*b*) blood culture; (*c*) blood serum tests such as the Widal and Wassermann reactions. A complete blood count involves the enumeration of the white and red corpuscles and an estimation of the hæmoglobin percentage. The colour index is obtained by dividing the latter by the percentage of red corpuscles. I am afraid our discussion will involve the quotation of many figures and the frequent mention of the names of cells found in the blood. In order to clear the ground I first show you a table giving the composition of the blood of a normal adult:—

Hæmoglobin ... ... 100 per cent. Colour index ... ... 1.
White blood corpuscles ... 5,000 to 10,000 per c.mm. (average=7,000).
Red blood corpuscles ... 4½ to 5½ million " (" =5,000,000).

Differential Count of White Corpuscles.

		Per cent.	Per c.mm.
(P.)	Polymorphonuclears	60-70	= 3000-7000
(L.)	Lymphocytes	20-25	= 1000-2500
(L.M.)	Large mononuclears	2-6	= 100- 600
(E.)	Eosinophiles	0·5-4	= 25- 400
(B.)	Basophiles	0·1-1	= 5- 100

In the female the red corpuscles may be less, and in children the lymphocytes are usually present in larger number. All the above figures are subject to wide variations in disease, in one case, for instance, the total number of whites is altered, in another the percentage of polynuclears is increased. The reds may be decreased or increased in number, and so on. To give anything like a complete list of these variations would take a very long time; what I propose to do, therefore, is to take a few clinical cases to show you how their blood differed from the normal, and thereby enabled one to arrive at a diagnosis of the disease present. I think it will be best to begin with a simple case of leucocytosis due to the presence of an abscess.

CASE 1.—A man, aged 45, complained of pain in the left loin; he was pale and seemed rather ill, but the temperature was normal and he was able to attend his business. On examination tenderness and rigidity of the muscles near the spine were discovered. Lumbago or possibly some inflammatory lesion was suspected. The urine was normal. A blood examination was made with the following result:—

White blood corpuscles (leucocytes) = 20,000 per c.mm.

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	78·0 =	15,600	B.	0·2 =	40
L.	19·0 =	3,800	B.	0·2 =	40
L.M.	2·6 =	520			

A marked increase in the number of white cells is seen; on looking at the figures in the differential count the polynuclears are seen to be much increased in relative and absolute numbers. A definite and marked polynuclear leucocytosis was present. Note the decrease in the percentage of lymphocytes; the actual number present as seen in the column of absolute numbers is, however, increased. The leucocytosis indicated an inflammatory lesion, and at an exploratory operation performed a few days later a large abscess was found within the abdominal wall. Staphylococcus aureus was obtained on cultivation of the pus, and from this I prepared and used a vaccine with a satisfactory result.

The performance of a differential count of the white cells in addition to their total enumeration is an important part of the examination. To show you how one is helped by it I cannot do better than give you the blood condition revealed by the next case.

CASE 2.—A patient, aged 54, was suffering from the effects of a high temperature and a septic condition of her mouth with also a large sloughing patch inside the cheek. The tissues of the cheek and neck were swollen and hard, and the suggestion of cancrum oris was put forward. The heart's action was very feeble. I made a bacteriological examination of the mouth and blood. Cultivations were made from the cheek and gums with the object of finding out whether any one particular organism was the cause of the disease; a blood culture was also made to ascertain whether the patient was suffering from septicæmia. A complete blood count was also performed and the following blood picture revealed:—

Hæmoglobin... ... ... 50 per cent. Colour index ... 1·3
White blood corpuscles ... 21,000 per c.mm.
Red " " ... 1,920,000 "

Differential Count of White Blood Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	0·6 =	126	E.	0·0 =	
L.	98·4 =	20,664	B.	0·0 =	0
L.M.	1·0 =	210			

Taking notice only of the white cells for our present purpose you will see that the total number differs very little from that present in the first case, and without going further one would have said that this was a case of leucocytosis due to the septic infection, but the differential count gives quite a different aspect to the case. The total increase is due to a marked multiplication of the lymphocytes; the relative increase in these cells is enormous—i.e., from a normal count of 20–25 per cent. to 98·4 per cent. The total or absolute number of lymphocytes is 20,664 per c.mm. This, therefore, is a definite condition of lymphocytosis and falls within the class of blood disease named lymphatic leukæmia. The polynuclear cells, on the other hand, are reduced to 0·6 per cent., with an absolute number of only 126 per c.mm. The cultivations from the mouth yielded a variety of bacteria, but the blood removed from a vein in the arm proved to be sterile.

This case affords a striking illustration of the value of a complete blood examination, the disease from which the patient suffered was definitely ascertained, and one was able to go further—the prognosis could be given—for it is a well-known fact that lymphatic leukæmia is a fatal disease. It may last for several years, and usually terminates as a result of some septic infection. Remembering this, and also taking note of the very high percentage of lymphocytes and very small absolute number of polynuclears, an early termination to this case could be predicted. The heart's action became rapidly weaker, and the patient died within the next 24 hours.

I have met with a series of about 12 cases of lymphatic leukæmia during the last few years. In nearly all of them the true nature of the disease has not been apparent from clinical data and has been discovered by blood examination. The next case illustrates several points in this disease.

CASE 3.—The patient, aged 79, had enjoyed good health until the present illness began about six weeks before his death. He became very weak and was markedly pale; the temperature was normal. The spleen could be felt moderately enlarged, and the liver slightly increased in size. There was no ascites. A provisional diagnosis of cirrhosis of the liver with enlarged spleen was made. The blood count was found to be as follows:—

Hæmoglobin	80 per cent.	Colour index ...	1·2
White blood corpuscles ...	435,000 per c.mm.		
Red ,, ,, ...	3,280,000 ,,		

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	1·5 =	6,525	E.	0·0 =	0
L.	98·0 =	426,300	B.	0·0 =	0
L.M.	0·5 =	2,175			

This shows a very high white count, which is seen to be due almost entirely to an increase in the number of lymphocytes; therefore it is a condition of lymphatic leukæmia. I wish to draw your attention to the necessity of getting the absolute number of cells as well as the percentage; here the polynuclear cells are reduced to 1·5 per cent. from a normal figure of between 60 and 70 per cent., but the absolute count gives 6525 cells per c.mm. This is a normal number; a wrong impression would be gained if the percentage figures only were considerd. The large mononuclears illustrate the same point.

Now let us see what happened afterwards. On Nov. 20th, a fortnight later, the figures were as follows:—

Hæmoglobin	75 per cent.	Colour index ...	1·2
White blood corpuscles ...	350,000 per c.mm.		
Red ,, ,, ...	3,120,000 ,,		

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	0·8 =	2,800	E.	0·1 =	350
L.	99·0 =	346,500	B.	0·0 =	0
L.M.	0·1 =	350			

The hæmoglobin and red blood corpuscles are getting lower. The white cells are much lower. But now turn to the differential count; the lymphocytes, although much reduced in absolute number, form 99 per cent. of the white cells. The polynuclears are decreasing. On Dec. 4th a third examination showed:—

Hæmoglobin...	70 per cent.	Colour index ...	1·4
White blood corpuscles ...	175,000 per c.mm.		
Red ,, ,, ...	2,560,000 ,,		

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	0·35 =	613	E.	0·0 =	0
L.	99·5 =	174,125	B.	0·05 =	87
L.M.	0·1 =	175			

The hæmoglobin and red corpuscles are still further reduced. The white cells are much lower, but turn to the figures in the differential count. The lymphocytes now form 99·5 per cent. of all the white cells in the blood. The polynuclears form only 0·35 per cent., with an absolute number of 613 per c.mm.—a very small number of this important cell. Note also the high colour index which is a feature of this disease. The patient was obviously going downhill clinically and his blood condition corroborated this. He died three days later. One is greatly tempted to give further instances of this remarkable disease, but time is limited and so I pass on to other blood conditions.

You are often confronted by such cases as follows. A man or woman is very pale; the patient's friends notice the anæmic condition and may comment upon it. The patient may feel well in one case or unwell in another. The breathing may become affected or the strength lowered. The patient may or may not be getting thinner; lumps may appear in the neck, axillæ, or groin. Symptoms and signs of a variety of chronic affections accompanied by anæmia. A differential diagnosis by ordinary clinical means may be made and the nature of the disease ascertained. On the other hand, the pathologist's aid may be required to help settle the diagnosis; it may be settled straight away by a blood examination only, as happened in the foregoing leukæmia cases, but in most cases the pathological findings must be taken together with the clinical data. This point must be remembered by those who require the help of the pathologist. *Clinical data should always be supplied.* Let us take a case presenting the signs and symptoms of pernicious anæmia.

CASE 4.—The patient was a woman aged 32. She was very pale and felt curiously weak and languid; her skin had a faint yellow tinge, "lemon yellow." There was no loss of flesh, and no localising physical signs were present. The blood picture was as follows:—

Hæmoglobin	35 per cent.	Colour index ...	1·6
White blood corpuscles ...	3,000 per c.mm.		
Red ,, ,, ...	920,900 ,,		

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	27 =	810	E.	3 =	90
L.	58 =	1740	B.	2 =	60
L.M.	7 =	210	Myelocytes..	3 =	90

The red corpuscles vary a great deal in size and shape, polychromatophilia is marked; 15 normoblasts and 5 megaloblasts were seen while counting 200 white cells.

Note the low white count and the high colour index, also the reversal of the percentage figures of the polynuclears and lymphocytes and the presence of nucleated red corpuscles, especially megaloblasts. Then notice the variation in the size and shape (poikilocytosis) of the red corpuscles and the altered staining reactions (polychromatophilia). A new white cell appears in this blood—the myelocyte. A few of these cells appear in many cases of severe anæmia, but they occur in large numbers in myelogenic leukæmia. The blood, in fact, shows all the changes typical of pernicious anæmia. Now compare the blood of the next case with the above.

CASE 5.—The patient was about 50 years of age; she was very pale and felt weak; the skin, however, had not that curious light yellow tinge. There was no loss of flesh. No organic disease could be made out clinically, and the medical man in charge suspected pernicious anæmia. I made an

examination of the patient's blood with the following result :—

Hæmoglobin... ... ... 30 per cent. Colour index ... 0·6
White blood corpuscles ... 11,000 per c.mm.
Red ,, ,, ... 2,560,000 ,,

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	86·0	= 9460	E.	0·25	= 27·5
L.	10·0	= 1100	B....	0·25	= 27·5
L.M.... ...	3·5	= 385			

This was obviously not the blood of the pernicious type of anæmia ; in short, it is typical of a secondary anæmia. The hæmoglobin percentage is low in both cases, but the red corpuscles are not so reduced in proportion, so that the colour index is low ; that is one point against pernicious anæmia. The white cells are increased in number, whereas in the former case they are below normal (leucopenia)—another point. The differential count shows a polynuclear percentage of 86 ; this agrees with a secondary anæmia due to such a cause, as, for instance, hæmorrhage, and is quite against pernicious anæmia, where the percentage and total number are usually below normal. The lymphocytes are low in the first column as against the high percentage in the former case. The condition of the red corpuscles in the stained film showed them to be natural in size, shape, and staining reactions—an important point against pernicious anæmia. These two bloods serve very well to show the striking difference between these two conditions which clinically resemble one another so closely. It was quite evident that there must be some definite lesion present in this case to account for the anæmia. There are many causes of secondary anæmia, among which I might mention hæmorrhage, chronic nephritis, malignant disease, phthisis, malaria, acute infective diseases.

The urine was found to be normal in this case, and there was no acute infective disease present. The patient was seen again, and as a result of further questioning it was at last discovered that she had been losing a good deal of blood from hæmorrhoids. This fact had been withheld at the first interview. An operation for the relief of the hæmorrhoids was afterwards performed, and when the patient was seen a few months later she had quite recovered from the condition of extreme pallor previously existing.

Tumours in the abdomen on the left side presenting the physical signs of an enlarged spleen are always interesting ; they are a fruitful source for speculation, first for the clinician and then for the pathologist. The question arises, Is the tumour an enlarged spleen, or is it an enlargement of the left kidney, abdominal glands, &c. ? One meets with many of these cases, and the diagnosis often depends upon the result of a blood examination. One is tempted to give details of a number of such cases, but I must be brief. Let us suppose that in a given case the diagnosis from physical signs, examination of the urine, &c., has pointed strongly to the tumour being a large spleen, we can then proceed to a blood examination for further help. Let me give you illustrative cases.

CASE 6.—A young lady had a large swelling in the abdomen on the left side, reaching downwards almost to Poupart's ligament and laterally to the right of the umbilicus. A notch could be felt in its right border, and the tumour filled the left loin. It was tender in places and dull to percussion. The patient was very pale and thin, and blurring of vision was found to be due to retinal hæmorrhages. The temperature was raised. She suffered from epistaxis at intervals. A combination of symptoms and signs typical of leukæmia. The blood was examined to verify this diagnosis and the following condition found :—

Hæmoglobin ... ... 50 per cent. Colour index ... 1·2
White blood corpuscles ... 384,000 per c.mm.
Red ,, ,, ... 2,200,000 ,,

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.
P.	28·0	= 107,520
L.	14·0	= 53,760
L.M.	5·5	= 21,120
E.	5·0	= 19,200
B.	4·0	= 15,360
Myelocytes (neutrophile) ...	37·0	= 142,080
,, (eosinophile)... ...	5·5	= 21,120
,, (basophile)	1·0	= 3,840

Twenty normoblasts and two megaloblasts were seen while counting 400 white cells.

A great increase in the number of white cells is seen. The hæmoglobin and red corpuscles are much below normal. The chief interest, however, lies in the differential count of the white cells. All the cells are greatly increased in absolute numbers ; the percentages are much reduced in the case of the polynuclears and lymphocytes, partly as a result of an increase in that of the basophiles, but mainly from the presence in the blood of a new cell, the myelocyte (marrow cell). This is a large cell with a pale rounded nucleus, containing red granules in the protoplasm of the neutrophile and eosinophile varieties and purple granules in the basophile type (Ehrlich's stain). In this patient's blood there is a total percentage of 43·5 per cent. myelocytes. There are a few nucleated red corpuscles, but otherwise they are natural in size and shape. The diagnosis of myelogenic leukæmia was confirmed, and it was of a severe form. In spite of this the patient rallied, and although she suffers from relapses she is able to get about in the intervals. It is now nearly two years since the above examination was made. Later counts of the blood show marked differences ; sometimes the blood shows improvement and at others it is worse. The general character of leukæmia, however, remains. Now let us take another case.

CASE 7.—The patient was a man, aged 43, who had a large tumour in the left side of the abdomen presenting all the characters of an enlarged spleen. He suffered from general weakness, but otherwise was fairly well. No other organic changes were evident. He was pale, but not markedly so.

Hæmoglobin... ... ... 70 per cent. Colour index ... 0·9
White blood corpuscles ... 1,600 per c.mm.
Red ,, ,, ... 3,900,000 ,,

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P.	51	= 816	E.	5	= 80
L.	38	= 608	B.	4	= 64
L.M.	2	= 32			

The red corpuscles are natural in size, shape, and staining reactions.

The outstanding feature here is the low total white count ; this occurs also in pernicious anæmia, as we have seen, but there are points of difference in this blood. In this case the colour index is below 1 and the red corpuscles are natural in size, shape, and staining reactions. Then, remembering our method of taking note of clinical data, together with the pathological findings, we find that this patient had a distinctly enlarged spleen, a condition which does not occur in pernicious anæmia. The case was one of so-called splenic anæmia.

CASE 8.—I examined the blood of a man, aged 41, who was an inmate of the Hornsey Cottage Hospital. He was pale and rather weak. The abdomen was large and caused a sensation of weight and fulness. On examination the spleen was felt to be moderately enlarged and hard, and the liver also reached a lower lever than normal. There was no ascites. Leukæmia was suspected, but the clinical condition was not typical. The blood condition was as follows :—

Hæmoglobin ... ... 75 per cent. Colour index ... 0·9
White blood corpuscles ... 4,000 per c.mm.
Red ,, ,, ... 4,000,000 ,,

Differential Count of White Corpuscles.

	Per cent.	Per c.mm.		Per cent.	Per c.mm.
P....	61	= 2440	E.	3	= 120
L.	31	= 1240	B.	0	= 0
L.M....	5	= 200			

The red corpuscles were natural in shape, size, and staining reactions.

This was clearly not a case of leukæmia ; it was an anæmia of a secondary type. Note the low white count, which resembles that of the preceding case. Having seen a similar case shortly before in which Wassermann's test for syphilis was positive on repeated examination, I tried the same test on this man's blood and found it also was positive. Now the other case, a man, aged 43, died, and I was able to verify the diagnosis of syphilis by post-mortem examination. The spleen was markedly enlarged, contained a gummatous mass, and was affected with amyloid degeneration. The liver was large and deformed by cicatrices and its capsule

was thickened (perihepatitis), it was cirrhotic and contained several gummata. The occurrence of a low leucocyte count in cirrhosis of the liver is not an uncommon occurrence. If in such a case the lesion is due to syphilis the line of treatment is clear; Wassermann's test, therefore, is a valuable aid to diagnosis and subsequent treatment.

Turning now to another group of cases in which a blood examination is useful, you meet with patients developing an acute illness, starting with an elevation of temperature and all the accompaniments of fever, but with no *absolute* localising signs—cases which at the onset require all your knowledge to be brought into play in order to make a differential diagnosis between such diseases as typhoid fever, appendicitis, acute tuberculosis, meningitis, pneumonia, and septicæmia. It is not always possible to make an early and accurate diagnosis. You will agree that the earlier this is done the better it is for all concerned.

Typhoid fever, for instance, is not at all easy to diagnose during the first week. It is gradually recognised as the days go on, partly by a process of exclusion. Any help that we can obtain by an examination of the blood is extremely useful. You are all well acquainted with the Widal test, a valuable reaction and one which should always be used. But unfortunately it does not come off until the beginning of the second week of the disease, and in some instances not at all. A valuable adjunct to this test is the blood count, for it is found that the leucocytes do not increase in number in the peripheral circulation as they do in many other infections. Moreover, they actually decrease in number—i.e., there is a leucopenia, the number is often reduced to 4000 per c.mm. Another test is the "blood culture," in which one takes about 5 c.c. of blood from a vein, usually at the bend of the elbow, and inoculates it into suitable media. By this means we can very often obtain cultures of the typhoid bacillus in the middle of the first week. For some years I have been in the habit of combining these methods of investigation, and am convinced that it is the best plan. Of course, it is not possible to do this in all cases; a certain number of cases also are seen for the first time when the disease has advanced to the second week and a positive Widal reaction is usually easily obtained. But in the first week of an acute illness a blood count and blood culture will be found a valuable aid. The following case illustrates the value of such an examination.

CASE 9.—A girl, aged 17, was attacked by an acute illness, accompanied by rise of temperature, which reached 104° in about three days. No localising signs could be discovered in the head, chest, or abdomen. Several septic-looking ulcers appeared on the labia, and syphilis was suggested as the cause of the illness; the temperature was, however, too high, and the general condition suggested some other form of blood infection. An examination of the blood was made about the third day. First the leucocyte count showed only 7000 cells per c.mm.; this was low for such a raised temperature, and so typhoid fever was indicated. Then the Widal test was performed, but it proved inconclusive, for although very small clumps appeared one could not say the reaction was positive. Small clumps appear in this test as a result of infection by other organisms; the clumping must be well marked to prove that typhoid fever is present. A blood culture made at the same time as the count yielded a growth of typhoid bacilli after two days' incubation of the tubes. Another Widal test made later showed marked clumping. The case followed the ordinary course of an enteric.

The low leucocyte count occurring in such a case led me to think that it was one of typhoid fever, and I advised that the usual precautions should be taken. Low counts occur in other infections, such as infective endocarditis, malaria, Mediterranean fever, general peritonitis with collapse, but in all these conditions there are clinical manifestations present to put one on the right track. Now let us contrast this case with the next.

CASE 10.—A young lady was attacked by acute abdominal pain accompanied by an elevation of temperature; physical examination revealed tenderness in the lower abdomen, especially marked on the right side. Appendicitis was suspected, but the medical man in attendance could not fit in the signs as altogether pointing to a lesion of the appendix and so thought typhoid fever might be present. I counted the leucocytes and found 16,000 per c.mm.; of these the polymorphonuclears formed 77 per cent. A Widal test proved negative. The blood count was too high for uncomplicated typhoid fever, both in the total figure and the large percentage of polynuclears. Appendicitis was diagnosed from the combined examination. The case followed the course of a mild attack of this disease without an operation.

CASE 11.—In this patient, also a young woman, an attack of acute abdominal pain with fever was diagnosed on clinical grounds as appendicitis and the appendix removed. It showed very slight naked-eye signs of inflammation, but this is not an uncommon feature, for such appendices often show marked microscopic evidence of inflammation. The patient's temperature did not fall after the operation; on the other hand, it continued to rise. This aroused suspicion and the possibility of enteric fever being present was entertained. A leucocyte count of 7500 per c.mm. was found and a Widal test proved to be positive. The typhoid bacillus grew in the culture media which I had inoculated with the patient's blood and so the diagnosis was confirmed. She recovered after passing through a mild attack.

I cannot too strongly impress upon you the value of making a cultivation of the blood in such cases as these. Blood cultures are also invaluable in such conditions as morbus cordis with or without clinical signs of a valvular lesion. By this means positive evidence of a septicæmia can be obtained and the infecting organism recognised. If the blood proves to be sterile, well and good; we feel much relieved and can give a good prognosis. If organisms are present we can use them for the preparation of a vaccine, and although the results of vaccine treatment in infective endocarditis are on the whole disappointing, some cases improve and a few are apparently cured. This encourages us to persevere with this form of treatment in the absence of any other definite curative agent.

In cases of puerperal sepsis blood cultures will give definite evidence of the presence of septicæmia. I have examined a large number of cases of puerperal fever and found actual septicæmia present in quite a small proportion. Cases which have presented all the appearances of a blood infection have given varying results, some positive and the great majority negative. Very alarming symptoms may be present without the presence of organisms in the blood. It is a source of great relief to find septicæmia absent in such patients, and a good prognosis can be given. In septicæmic cases the organism found is nearly always the streptococcus brevis. I usually also make cultivations from the cervix and find that this organism is a common one in this region. Failing to find organisms in the blood I always use those obtained from the cervix for the preparation of a vaccine and have had good results from this form of treatment.

There are many other cases illustrating the value of a blood examination which I would like to mention, but time does not permit. I hope, however, that the above brief accounts have served to interest you in this subject. The study of the blood changes in disease is a fascinating one, and, speaking from my own experience, one which very often affords great help in enabling one to arrive at a correct diagnosis.

Harley-street, W.

A MUNICIPAL DISPENSARY AND TUBERCULIN TREATMENT.[1]

BY A. MEARNS FRASER, M.D. EDIN., D.P.H. CAMB.,
MEDICAL OFFICER OF HEALTH, PORTSMOUTH;
AND
HILDA CLARK, M.B., B.S. LOND.,
MEDICAL OFFICER TO THE MUNICIPAL TUBERCULIN DISPENSARY, PORTSMOUTH

IN regard to curative measures for tuberculosis a departure was inaugurated by the Portsmouth Town Council, when instead of trusting mainly to the generally accepted sanatorium methods, the attempt was made to rely principally upon a municipal tuberculin dispensary. The term "tuberculin" was employed to indicate that it differed from existing tuberculosis dispensaries in that its essential feature would be the treatment, as far as possible, of all patients by tuberculin. The use of tuberculin is now becoming so general that in a short time probably little practical difference will be found to exist between the

[1] Abstract of a paper read before the Royal Sanitary Institute at York on July 31st, 1912.

Portsmouth Tuberculin Dispensary and the other dispensaries for the treatment of tuberculosis that are rapidly springing up in the large towns of the kingdom. At the time of the establishment of the Portsmouth Dispensary, however, this was far from being the case; the experiment was regarded with grave doubt by the medical profession as a whole, and many were the disasters that were predicted. After the personal observation during two years of the treatment of some hundreds of patients by tuberculin at dispensaries, we are able to say that, while a few have failed to respond, there has been no evidence to show that in any case harm has been done. On the contrary, a large proportion of the patients, in all stages of the disease, have received enormous benefit, and we have no doubt that the skilled administration of tuberculin at dispensaries will prove the most potent factor in any municipal scheme for the solution of the consumption problem in this country.

General Scope of Dispensary: Municipal Control.

The dispensary is a municipal institution, it is financed by the local authority, and is managed by a subcommittee of the public health committee. We are strongly of opinion that all efforts for the control of tuberculosis in a municipality should be organised and administered by the local sanitary authority acting on the advice of their medical officer of health. In this connexion we regard it as equally important that Local Insurance Committees, in "making arrangements" for sanatorium benefit for insured persons and their dependents, should make these arrangements with the local sanitary authorities. Separate tuberculosis administration must infallibly lead to waste, extravagance, and overlapping, and must fail to secure that complete coördination of effort which is essential if the best results are to be secured.

Voluntary Care Committee

The "Voluntary Care Committee" is formed of representatives from all the voluntary organised charitable associations in the borough, and includes members of the board of guardians and of the health committee. This committee undertakes the duty of investigating those cases which appear to be unable to carry out the medical instructions, especially in regard to rest, food, and other home conditions, and of securing the necessary help from the most appropriate charitable or other sources. Sanatorium and hospital "letters" have also been secured for a considerable number of cases for whom provision has not yet been made by the municipal authority, but this part of the work will doubtless be lessened under the provisions of the National Insurance Act. A large number of children have been sent away to the country or to convalescent homes. The committee meets once a fortnight, and the honorary secretary attends at the dispensary on several days a week to interview patients who are referred by the medical officer. 200 patients have thus been dealt with during the year, and in every case there has been secured the necessary advice or help, without which it might have been impossible for treatment or hygiene education to be of much avail.

Hospital Accommodation.

Hospital accommodation for a certain proportion of cases who need rest and nursing before they can be brought into a condition when tuberculin can be used effectively is provided at the dispensary, or, better, just outside the town within easy visiting distance. In Portsmouth, the Langstone (small-pox) hospital of 11 beds has been utilised for this purpose since September last. The number of beds which should be provided in connexion with a dispensary will depend to some extent on the housing conditions of the district. In Portsmouth, where these are good, we estimate that about one bed per 9000 of the population will be sufficient. Since patients suffering from every form of tuberculosis, and in every stage of the disease, must be provided for, the scheme must embrace various auxiliary institutions in addition to the hospital accommodation in direct connexion with the dispensary. For a certain class of patient sanatorium treatment will be required, so that it is necessary to have available some beds in a sanatorium; hospital accommodation, apart from the poor-law infirmary, will be necessary for advanced hopeless cases in order to prevent the spread of infection; there must also be special provision for children, including open-air residential schools, country homes, and hospitals for the treatment of surgical tuberculosis.

Details of Administration.

The dispensary is situated in a central part of the borough and is easily accessible from all parts by trams. Facility of access is an important consideration, having regard to the fact that it is inadvisable for a number of our patients at the commencement of their treatment to walk any great distance to and from the dispensary. The dispensary itself is a one-storey building, with consulting-, waiting-, and dressing-rooms, and a small laboratory.

The present staff consists of two medical officers and two fully trained nurses who act as health visitors. The dispensary is open every day of the week except Sundays. The mornings are occupied with the examination of new patients, the periodic re-examination of patients during the course of treatment, laryngoscopy, laboratory work, visits to the hospital in connexion with the dispensary, care-committee work, and matters incidental to dispensary administration. The afternoons and evenings are taken up with the routine treatment of patients by the injection of tuberculin. In fixing the hours during which the dispensary is to be open, regard is paid to the convenience of the patients. The method adopted is to arrange for four or five patients to come at each quarter of an hour throughout the time the dispensary is open.

All the charts, case papers and particulars of each patient under treatment are kept together in one case; the cases are kept in alphabetical order on the vertical filing system beside the consulting table, and as each patient is seen his weight (ascertained by the nurse), the temperature taken by himself four times a day since his last visit, his dose of tuberculin, and any other particulars are entered up on his chart. A complete record of any patient can thus be found instantly at any time. A large number of our patients are sent by doctors, and they are referred back again to their own medical attendants for complications or other incidental home treatment.

When a new patient presents himself at the dispensary his name and address is taken and he is seen by the medical officer, who gives him an appointment for a complete examination; in some cases it is at once apparent that the patient is not suitable for treatment, and he is referred elsewhere without delay. The patient is next provided with a thermometer and a temperature card, and is instructed by the nurse how to take and record his temperature. He is then visited at home by the nurse, who ascertains the conditions there, and gives him such advice in regard to these as may be necessary. Specimens of sputum and urine are secured for examination. When he attends at the dispensary for examination his case is thoroughly gone into, a diagnosis made, and the method of treatment decided upon. He may be (1) taken on at once for a course of tuberculin treatment at the dispensary; or (2) ordered a preliminary period of rest at home; or (3) referred to hospital for a period of observation, where tuberculin treatment may be commenced, to be continued later on at the dispensary; or (4) to a sanatorium; or (5) to a general hospital or to his own medical attendant on account of complications; or (6) kept under occasional observation; or (7) found not to be suffering from tuberculosis.

Analysis of Applications at the Dispensary from June, 1911, to June, 1912.

In explanation of the fact that many more applied than have been treated, it must be pointed out that there are always more applications than can be dealt with satisfactorily by the staff. Some amount of selection has therefore been necessary, and the principle has been to postpone the cases in which delay was not likely to make much difference. Thus certain of the contact and doubtful cases have been kept under observation before testing, and chronic cases suffering from complications likely to render treatment futile have been refused, especially if they were not in an infective condition. Many advanced cases have, on the other hand, been given the chance of improvement afforded by tuberculin, because, even if treatment failed, it has been found that they are much more willing to take pains about preventing infection if they are under orders at the dispensary. The number of applicants could easily have been increased had there been sufficient staff to follow up all the contact cases in the poorest quarters of the town.

TABLE I.—*Showing Decisions as to Applicants.*

The total number of applicants at the dispensary is 880, who have been dealt with as follows:—
Not yet advised, 133.
Lost sight of since application, 31.
Seen and advised by medical officer, 716.
Of the 716 patients seen and advised by medical officer—
433 were entered for tuberculin treatment (analysed in Table III.).
198 were diagnosed as phthisical but not treated (analysed in Table II.).
67 were diagnosed as not phthisical,
25 being proved by the subcutaneous tuberculin test to be non-tubercular.
18 were referred elsewhere without a diagnosis being made.

TABLE II.—*Patients Diagnosed as Phthisical and not Treated, 198.*

67, disease too advanced for patient to benefit from tuberculin under dispensary conditions; of these, 24 are known to have died.
87 not admitted because more patients were attending for treatment than could be dealt with by the staff. As far as possible these cases were referred elsewhere for the best treatment available, and many will probably be treated at the dispensary later.
29 declined treatment.
15 were considered not to be in need of special treatment.

Diagnosis.

The effort to diagnose at the earliest moment possible, which must be made, necessarily leads to the inclusion of a wide variety of cases under the term tuberculous, and there is therefore great need for most careful classification. Diagnosis of the cases examined at the Portsmouth Dispensary has been based on a careful consideration of symptoms, history, physical signs, temperature, sputum, and reaction to tuberculin, and has seldom been made in less than a fortnight's observation. Since this diagnosis may be held to depend on the personal factor, it is important in the estimation of the results of treatment to classify the cases according to the grounds on which it is based. This is done in the following way for pulmonary cases:—

α. Diagnosis on presence of tubercle bacillus.
β. Cases showing such signs and symptoms as are universally admitted to be evidence of *active* tuberculosis. Cases which might otherwise have been doubtful are included if a definite and unmistakeable *focal* reaction to tuberculin is obtained.
γ. Cases showing definite signs and symptoms which react to tuberculin, but in which the evidence of *active* tuberculosis, although very strong, could not be considered absolutely conclusive.
δ. Cases showing indefinite signs and symptoms, reacting to tuberculin, but not showing a focal reaction, and where the disease was considered possibly, or even in some cases probably, quiescent.

The results of treatment in the patients who have been discharged, classified according to this scheme on the basis of diagnosis, are given in Table VI.

Classification of Patients According to the Extent of the Disease.

The object of classification is to give an analysis of the material dealt with and of the effect of treatment in different types of case. It is important that the method adopted should be such as to convey, as clearly and correctly as possible, the extent of the disease and the general condition of the patients in each class. The difficulty lies in the large share that the personal factor plays in the estimation of many cases. In order to facilitate comparison with other workers cases have been classified by two separate methods.

1. According to a simplification of the well-known Turban scheme (by the extent of the disease in the lungs, since this has been very widely adopted). A. Stage 1. Definite signs, limited to a portion of one lobe. B. Stage 2. Definite signs, limited to a portion of two lobes or the whole of one lobe. C. Stage 3. Definite signs extending beyond the above.

Cases with the larynx also affected are placed in corresponding classes, according to the extent of the disease in the lungs, with the letter "D" prefixed, and those with some other focus besides the lungs are labelled "E."

The number of patients the examination of whom has been sufficiently complete for accurate classification is 528, the number in each of the above-mentioned classes being:—

A	103	DA	40
B	117	DB	37
C	111	DC	46
E	27		

The remaining cases being either disease quiescent or focus uncertain, 14, or non-pulmonary, 33.

The results of treatment in the patients who have been discharged, classified according to this scheme on the extent of the disease, are given in Table V. We have found, however, that this method of classification does not give a comprehensive picture of the types of case met with, and have therefore adopted the following classification based on a consideration of the severity of the symptoms, the history, and the extent of the physical signs:—

TABLE IIA.

	Class.	Symptoms.	Physical signs.	History.	Diagnosis (according to classification already given).	Number.
1.	"Contact."	None.	None definite.	Generally contact (reason for application)	(By tuberculin reaction alone.)	12
2.	"Probable."	Suspicious.	Not definitely those of active disease.	Recent.	(Chiefly by tuberculin reaction.)	22
3.	"Early, slight."	Definite.	Definite, limited.	,,	α or β or γ.	83
4.	"Early, acute."	Pronounced.	,,	,,	α or β.	39
5.	"Chronic, slight."	Moderate.	Limited.	Long standing.	α or β or γ.	76
6.	"Chronic, advanced."	,,	Extensive.	,,	α or β rarely γ.	138
7.	"Severe."	Severe.	,,	Any length.	α rarely β.	91
						461

(N.B.—The first cases seen at the dispensary were not classified under this scheme, and 20 of these, with other foci besides the throat or lungs, have been referred elsewhere and lost sight of, and cannot now be included.)

The results of treatment in the 120 patients who have been discharged are given in Table IV., classified according to this scheme on the nature of the disease.

General Lines of Treatment.

The last given classification of patients is the one on which we can best describe the lines of treatment that we have adopted and that experience so far leads us to recommend. They are as follows:—

Class 1 ("contact").—Advice given as to hygiene and safeguards from further infection if the individual is still living with an infective case. In a few cases with bad family history, especially if of disease with particularly insidious course, a short course of tuberculin has been given.

Class 2 ("probably phthisical").—If symptoms are not relieved by attention to teeth and hygiene a course of tuberculin is given. This has generally relieved the symptoms and encouraged the patients, and has often led to the discovery of a more urgent case among friends or relations who have applied in order to have similar symptoms relieved.

Class 3 ("early, slight").—These cases are treated first at the dispensary, except in an occasional case where, for special reasons, it is inadvisable for the patient to remain at home. The majority are able to work and can be restored to health, and the disease arrested, without any further measures. A few fail to respond, and need to be sent to a sanatorium.

Class 4 ("early, acute").—These cases are generally supposed to need institutional treatment, and for a considerable number this is undoubtedly advisable. It is, however, surprising how many improve sufficiently with a few weeks' rest at home to attend the dispensary, and then do perfectly well without ever going away.

Class 5 ("chronic, slight").—These patients do well at the dispensary, especially if a little help is forthcoming, as they often have incurred heavy expenses through illness and loss of work. A large number of this class are women and children.

Class 6 ("chronic, advanced").—This includes a variety of conditions, and it is difficult to generalise about them. Many do surprisingly well at the dispensary, especially if at some period of their treatment they can have a short stay at a sanatorium. Others are obviously just on the verge of relapse, which places them in Class 7. Every variety of treatment may be needed for members of this and the next class, and experience is needed to see in which it may be worth while. From the point of view of preventing infection it is very urgent to treat these cases. The use of tuberculin at a hospital for advanced cases will patch up many and enable

them to go out for a while to work or live at home, to return with the next breakdown. If they remain under treatment and supervision from the dispensary this may be be done without risk to others.

Class 7 ("severe").—If hospital accommodation can be provided for these cases and tuberculin used when possible, some will be found to respond. Some of our most striking results have been obtained in this class, but it must be remembered that it is in this class that every method of treatment, as also nature unaided, has obtained an occasional miracle. A large proportion of these cases would be willing to go to a hospital if any possibility of improvement could be held out, if it were within the reach of their own people, and if it were not connected with the Poor-law.

Cases needing sanatorium treatment have been scattered among all classes except the first two. Those in Class 7 are not admitted to most sanatoria until they have improved and can be placed in Class 6. The selection has been made after observing which patients fail to respond satisfactorily to tuberculin, and yet, although the disease was advanced, responded enough to make such more expensive treatment worth while.

Method of Treatment by Tuberculin.

The procedure consists in endeavouring to raise the immunity of the patient by first giving small but steadily increasing doses of the less toxic tuberculins, so that when tolerance to these is induced the most powerful preparations can be safely and effectively employed.

The tuberculins used have been the different preparations of bovine and human old tuberculin, and the bacillary emulsion. "New" tuberculin has not been used on account of its expense. After experience for some time of the routine of P.T.O., P.T., Old T., and observing its scope and limitations, it has appeared preferable in some cases to employ either the albumose-free old tuberculin at an early stage, or the bovine bacillary emulsion.

What appears to us to be the important object to secure in treatment is that tolerance to a large dose of old (human) tuberculin should be attained, and of this we generally give 1 c.c. before discharging a patient, whilst occasionally the course has been continued up to 2 c.c. This may be attained in periods varying from four to 18 months, according to the stage of the disease and the resisting power of the patient. Doses are given at intervals of three to seven days, according to the size of the dose and the reaction to the preceding one. The increase of a dose varies as a rule from 50–25 per cent., and is determined by a consideration of the temperature, general reaction, gain or loss in weight, and the interval since the last dose (which is not always within the medical officer's control).

The question of whether to avoid reactions or not is one which depends to some extent on the individual patient, and while one patient is found to improve rapidly and more obviously while getting repeated sharp reactions, another only does well when a preparation and rate of increase have been determined upon that do not cause reactions of any severity. Although in some cases the reactions have been severe, there has been nothing to indicate that these have done harm. In one case the patient objected to continue treatment because he felt worse, but this was not a case in which reactions had been marked. There have been four other cases in which further treatment has been declined because of violent reactions, but these have admitted that they felt far better after than before. This improvement after reaction is so frequent that it becomes quite a commonplace among the patients, and it is especially marked amongst those who suffer from illness and prostration in excess of the physical signs and fever.

Some individual consideration is given to the question of work and reactions. Many patients can work through severe reactions without harm, but in other cases sensitiveness to tuberculin cannot be overcome unless the patient can rest the day after the dose. Many cases are able to remain at work throughout or are restored to working capacity during treatment. This is often very marked in the case of women doing their own housework, but statistics as regards these are not given, as it is impossible to estimate exactly how much work the patient is doing. In the case of those who work outside the home, some figures are given in the analysis of the results of the 120 cases which have been discharged. (See Table VII.)

TABLE III.—*Progress of Patients attending the Dispensary for Tuberculin Treatment during the Year.*

433 patients have been admitted for tuberculin treatment.
233 are under treatment now, 157 having attended for three months or more.
89 have been discharged well or much improved. In six of these less than three months' treatment was given, as it appeared unnecessary to continue the course.
26 have got worse or have shown no improvement, so that treatment was abandoned. These were all very advanced cases, 18 being in Class 7 and eight in Class 6, and tuberculin was given as affording the only chance. Eleven have died. Fourteen had treatment for three months or more. (It may be noted that since June 1st several have improved and returned for further treatment.)
31 have been obliged to stop tuberculin on account of complications necessitating other treatment. Ten of these had tuberculin for three months or more.
26 have been transferred to sanatoria or elsewhere for treatment, 16 having had tuberculin here for three months or more.
9 have left the town, nearly all being much improved.
19 have refused to undergo further treatment, of whom four have had tuberculin for three months or more.
The reasons given were:
"Quite well," 4.
Felt worse after two months' treatment, 1.
Did not like the reactions (but did not consider themselves worse), 4.
Would not follow advice as to work, &c., 5.
Could not attend, 4.
Doctor considered treatment unnecessary, 1.

Results of Treatment.

All cases who continue treatment for three months are entered in a discharge book, where full particulars are filled when they are discharged.

It is not considered that a shorter period than this gives a fair trial to tuberculin. The number discharged who have had at least three months' treatment is 120, and of these the following tables give an analysis of results obtained:—

TABLES IV. AND V.—*Results in 120 Cases Discharged, Classified according to Class of Disease by the Two Methods Previously Described.*

TABLE IV.

Class.	Improved.		Not improved.		Total.	Percentage of cases improved.
	Arrested.	Partial arrest.	Same.	Worse.		
1. "Contact" ...	3	—	—	—	3	100·0
2. "Probable" ...	9	—	—	—	9	100·0
3. "Early, slight"	24	3	2	—	29	93·0
4. "Early, acute"	8	1	1	—	10	90·0
5. "Chronic, slight"	11	3	3	—	17	82·3
6. "Chronic, advanced"	9	14	4	2	29	79·3
7. "Severe"	2	6	3	4	15	53·3
"Non-pulmonary"	8	—	—	—	8	100·0
—	74	27	13	6	120	84·1

TABLE V.

Pulmonary—						
A. "Early" ...	23	—	4	—	32	87·5
B. "Intermediate" ...	15	13	4	1	33	84·8
C. "Advanced"	3	4	3	2	12	58·3
Pulmonary and laryngeal—						
DA. "Early" ...	13	3	—	—	16	100·0
DB. "Intermediate" ...	4	3	1	—	8	87·5
DC. "Advanced"	3	4	1	3	11	63·6
"Non-pulmonary"	8	—	—	—	8	100·0
—	74	27	13	6	120	84·1

In most of the cases discharged "disease arrested" there was then no sputum, and in the cases in which sputum was still present no tubercle bacilli could be found on repeated search. Eleven patients have died, nine being those who were discharged worse, or the same as on admission. In one, who was treated through pregnancy, the disease was

partially arrested, but she relapsed after the confinement. In the other the disease appeared to be completely arrested, but the patient suffered from pernicious vomiting during her first pregnancy, labour was induced, and she died soon after. It may be noted here that eight other patients have been

TABLE VI.—*Classification of Results According to Grounds on which Diagnosis is Based.*

Diagnosis in pulmonary and laryngeal cases.	Improved.		Not improved.		Total.	Percentage improved.
	Arrested.	Partially arrested.	Same.	Worse.		
α. Tubercle bacilli present	19	17	9	6	51	70·5
β. Typical signs and symptoms. (Confirmed by tuberculin)	14	9	2	—	25	92·0
γ. Signs and symptoms such as are considered probably phthisical proved tubercular by tuberculin reaction ...	21	1	2	—	24	91·6
δ. Shown tubercular by tuberculin; signs and symptoms indefinite. (Classes 1 and 2)	12	—	—	—	12	100·0
Non-pulmonary cases	—	—	—	—	8	100·0
Glands	5					
Ophthalmic	1					
Peritonitis	2					
	74	27	13	6	120	84·1

treated through pregnancy and shown marked improvement. In three of these cases the patient has given birth to a healthy baby and is making satisfactory progress, one having returned for further treatment, and the others intending shortly to do so. The others have not yet been confined. Nine of the patients entered as discharged with the disease "partially arrested" were transferred to sanatoriums, and of these five are reported much better; one who was discharged under "partial arrest" has improved, and may now be counted under "arrested"; while another who refused to finish the course because he did not think it was necessary (one of the cases in Class 3 who was discharged as not improved) is known to have got worse and to have died. The other case in Class 3 who did not improve went to a sanatorium for a while and came back little better, but is now improving with second course.

All the patients discharged with the disease not fully arrested are expected to return for a second course. Nine have already done so, and four of these have improved further.

Conditions under which the Treatment of the Cases Discharged has been Carried out.

Most of these patients were treated at the dispensary without having recourse to any subsidiary measures. Sixteen were treated for varying lengths of time at Langstone Hospital, and of these six were sent to sanatoriums. Twelve patients, all advanced cases, were unable to work throughout the course of treatment. Some of these have been sent to sanatoriums and are expected to return fit for work.

TABLE VII.—*Showing Capacity for Work of Cases Discharged with Reference to Tubercle Bacilli in Sputum.*

Twenty were unable to work at the beginning, and returned to work during the course. These 20 patients belong to the following classes:—

	Number.	Tubercle bacilli found in
Class 3	3	—
,, 4	3	2
,, 5	2	1
,, 6	9	6
,, 7	3	3

One other patient in Class 6, with tubercle bacilli, was restored to part-work. Twenty-five were able to work throughout, and were classified as follows:—

Class 1	1	Class 5	5
,, 2	6	,, 6	3
,, 3	10		

Two who were at work at first had to stop, being bad cases in Class 6.

Conclusion.

Our excuse for presenting at this period the results from the Portsmouth Dispensary must be found in the large number of applications that are made to us for particulars of the effect of the dispensary treatment, and to the fact that as so many local authorities are now preparing schemes for sanatorium benefit it may prove of value to them to see what has already been accomplished by the use of tuberculin on a large scale under municipal control. The point above all others we wish to emphasise is that by taking full advantage of the possibilities of tuberculin treatment at dispensaries and similar institutions, it will be within the power of local authorities, provided that they are given the money which will be available under the National Insurance Act for "sanatorium benefit," to promote comprehensive schemes capable of dealing with all consumptive inhabitants of their district, a consummation that, if for financial reasons only, must ever be impracticable if recourse to treatment in sanatoriums had to be relied upon. Provided the bulk of tuberculosis patients can be satisfactorily treated, as we believe they can, at the comparatively inexpensive dispensary, there will then be sufficient funds available to provide the more expensive institutional treatment, either in sanatoriums or hospitals, for the residue of the patients for whom, owing to various reasons, dispensary treatment alone is deemed insufficient.

Finally, we would repeat what we have said before, that the provision of a dispensary to administer tuberculin treatment is by no means sufficient for attacking successfully the consumption problem. If success is to be secured, the scheme of which the dispensary is the centre must also include a hospital, a sanatorium, open-air residential schools, home supervision, a care committee, and many other measures.

THE TREATMENT OF HABITUAL DISLOCATION OF THE SHOULDER-JOINT.

BY E. D. TELFORD, F.R.C.S. ENG.,
ASSISTANT SURGEON, MANCHESTER ROYAL INFIRMARY.

THE condition of habitual dislocation of the shoulder-joint, though rare, is well recognised, and has been most commonly described as occurring in epileptics. It is, however, occasionally found in patients of normal health and physique, and in the two cases which form the basis of this article the accident happened to men of unusually good muscular development, the one a navvy, the other a professional Association footballer.

In all cases there is an initial dislocation which is reduced, but within a short time of the original accident the displacement tends to recur from slight violence or even, in the end, from the natural movement of the arm, especially in the direction of abduction. The subsequent dislocations are, as a rule, easily reduced, and, like the displacement of a semilunar cartilage in the knee, give rise to less and less acute disturbance with each recurring attack. The condition produces complete crippling for any active work, and therefore calls urgently for treatment.

The lesion is no doubt due primarily to the fact that the integrity of the joint is not fully restored after the first accident, and a consideration of the various injuries which may be inflicted in a dislocation of the shoulder suggests that the actual cause of habitual dislocation is not invariably the same. The varied character of the findings which are described in the literature of the subject bears out this view.

In any joint depending for its strength mainly upon the surrounding muscles, as does the shoulder, it is likely that some permanent disturbance of the balance of muscular power will be the most common cause of habitual dislocation. The muscles most likely to suffer in a dislocation of the shoulder-joint are the external rotators attached to the greater tuberosity of the humerus. These muscles may be torn from their attachments or the tuberosity itself uprooted from the bone. This detachment of the greater tuberosity occurs more often in dislocations of the shoulder than has been supposed, and is responsible for some of the more serious complications in the treatment and results of this injury. The injury to the external rotators, if imperfectly healed, must seriously disturb the balance of muscular power, and is the most likely cause of the recurrent nature

of the dislocation; certainly it will be found that the spinati muscles are much wasted in cases of habitual dislocation.

Other causes which may operate are gross injuries to the head of the humerus or to the glenoid fossa which have materially altered the contour of the joint surfaces, whilst in other cases the trouble has arisen from the presence, within the joint, of a loose body derived, by injury, from the articular surfaces.

The causes mentioned above must be associated with some lesion in the capsule of the joint if they are to produce their full effect. In a dislocation of the shoulder the capsular ligament is frequently torn from its attachment to the edge of the glenoid fossa at its lower and anterior part. This rent may remain unhealed or may be bridged over by inelastic scar tissue which subsequently yields. In other cases no scar is found, but the capsule presents a flaccid, overstretched appearance on its lower and anterior aspect. It may be that the distension of the joint due to the traumatic synovitis has led to permanent damage to the capsule.

In dealing with a condition such as habitual dislocation, dependent as it is upon mechanical alterations in or around the shoulder-joint, it is evident that no treatment short of operation will be of any value. Any appliance which may be designed to control the dislocation must involve a limitation of movement so great that the appliance becomes as irksome and intolerable as the disease itself. Assuming that operative treatment offers the only hope of success, the choice will lay between excision of the head of the humerus and the operation of capsulorrhaphy.

Excision, although it appears to have given very good results, is a needlessly severe operation, and should not be adopted as the first line of treatment. It may be that some cases, in which the lesion is dependent on gross damage to the humeral head, will require excision, but in general the operation of capsulorrhaphy is the simpler and gives the better result. Capsulorrhaphy was first done by Gerster in 1883, followed by Bardenheuer in 1886, and was fully described by Burrell in 1895. The aim of the operation is to reef the overstretched portion of the capsule or, better, to excise a large oval piece and suture the raw edges together. The excision of a portion of the capsule has the great advantage that it allows of a free exploration of the interior of the joint. A review of the reported cases shows that the operation has given most satisfactory results; it has been done some 40 times, and whilst there has been one instance of recurrence of the dislocation, there is no record of ankylosis or other damage to the joint.

Burrell approached the joint by the usual anterior route as for excision, but this route is not advisable, since it involves division of a considerable part of the pectoralis major tendon. It is the lower and anterior part of the joint which is the objective of the operation, and this aspect of the joint is best reached by an incision placed to the inner side of the coraco-brachialis muscle. The route which I employed in both my cases is, with slight modification, the route suggested by Thomas. It is direct, easy and rapid of execution, and does not involve the division of a single important structure, save only a section of part of the tendon of the subscapularis.

With the arm abducted to a right angle, a curved incision some seven to eight inches in length is made in the line of the anterior fold of the axilla. The incision follows the lower border of the greater pectoral, and is continued for some distance down the arm along the inner border of the coraco-brachialis muscle. The lower edge of the pectoral is defined and retracted upwards and inwards. The interval between the packet of axillary vessels and nerves and the coraco-brachialis is at once apparent. The vessels and nerves are gently retracted inwards, and the coraco-brachialis is drawn outwards. In this manœuvre the anterior circumflex artery will probably need division, and the separation, in a downward direction, of the fibres of the coraco-brachialis muscle will obviate harmful traction on the musculo-cutaneous nerve. If the arm be now rotated outwards and the head of the humerus thrust forwards, the subscapularis tendon is seen in the floor of the interspace between the neuro-vascular packet and the coraco-brachialis. If the subscapularis be now in part divided and in part retracted the underlying capsule is exposed. A large oval piece, measuring 1¼ in. by ½ in., is easily removed, and through the opening thus formed the interior of the joint is readily inspected and explored for any loose body or other abnormality. The long axis of the ellipse lies across the capsule at right angles to its fibres. The opening is closed by sutures of formalin catgut, and the incision in the subscapularis tendon is repaired by a second layer of sutures. The insertion of sutures is much facilitated by inward rotation of the arm. The wound is then closed without drain. The operation by this route is almost bloodless, and in the second of my cases it was not necessary to leave any ligature in the wound.

The after-treatment consists in fixing the arm to the side for eight days, after which the sutures are removed, and both active and passive movements are begun in all directions excepting abduction. At the end of the third week movements of abduction are made, and within six weeks free movements of the shoulder should be possible in all directions.

Brief notes of the two cases operated on by this method are appended.

CASE 1.—Male, aged 24, a navvy. Initial dislocation two years ago; recurrence frequent, at least once a week. A man of very good physique; left shoulder area somewhat wasted, especially in supra- and infraspinous fossæ. On complete abduction at the shoulder the head of the humerus slipped out and lay in the subcoracoid position; reduction equally easy. Radiogram showed nothing abnormal. Operation on Sept. 5th, 1911, capsulorrhaphy. Capsule very lax, but no scar or rent found. Result in June, 1912, is perfect; movements of shoulder free in all directions; is at work, and joint has not given any trouble.

CASE 2.—Male, aged 24; a professional footballer. Shoulder first dislocated by a fall at football a year ago; has been "out" nine times since the first accident. A subcoracoid dislocation of the left shoulder; some wasting in the supra- and infra-spinous fossæ; radiogram normal. Operation on Nov. 6th, 1911; capsulorrhaphy; capsule very lax, but showing no other abnormality. Result in June, 1912, is perfect; patient was playing football again before end of season.

Manchester.

SOME OBSERVATIONS CONCERNING SYPHILITIC SERA.

BY CHARLES RUSS, M.B. LOND.

DURING the course of a research to improve the accuracy of the opsonic index process[1] an observation was made which may be of service in the study of the blood changes in syphilis. In the paper referred to mention was made of the use of ferric chloride to agglutinate human red corpuscles. If washed human red corpuscles are mixed with ferric chloride diluted in normal saline there occurs an immediate agglutination of the red corpuscles which remain clumped for hours, or even days.

During the experiments referred to above, it was noticed upon one occasion that a visible agglutination had occurred even with a dilution of ferric chloride of 1 in 200,000 parts of normal saline. The human corpuscles were obtained from various sources from time to time, and upon one occasion the corpuscles failed to agglutinate with the ferric solution, and those had been obtained from a syphilitic patient. This was the first point of interest, and its cause was a matter of speculation. Supposing that syphilitic serum contained some substance inhibitory to the process of agglutination, I next tested whether a ferric chloride agglutination of normal human corpuscles could be "resolved" by the subsequent addition of normal serum, and this proved to be the case (subsequently noted in a text-book on immunity). The next point was to test whether syphilitic sera had a different (i.e., greater) power of resolving the agglutination than normal sera, and this also was apparent from a series of comparative experiments.

Owing to the courtesy of the staff of the Male Lock and St. Peter's Hospitals, I had access to syphilitic sera in the summer of 1910, and compared the resolving powers of about 70 syphilitic and 100 presumed normal sera (obtained elsewhere). The method used was as follows.

A dilution of ferric chloride in normal saline was obtained which completely agglutinated all the red corpuscles mixed with it, and this was considered a "critical" dilution (in the sense of leaving no visible unagglutinated red corpuscles). Having ascertained the strength of the critical dilution, I used a solution of double that strength and usually 1 in 2000 ferric chloride in normal saline to ensure a firm agglutination. The next step was to pool several normal sera and find the minimum volume of the pooled sera necessary to resolve a given volume of the agglutinated corpuscles. The

[1] THE LANCET, June 1st, 1912, p. 1461.

amount of normal serum used in the tests was to be subminimal—i.e., no resolution of the agglutinated corpuscles would occur, at least within 24 hours. Having settled this procedure suitable and measured volumes of the agglutinated corpuscles and of normal serum were drawn into capillary pipettes and mixed after expulsion on to a slide. The mixture was then redrawn into the shortened capillary pipette or special glass tubing and stood vertically in a plasticine tray, and the same procedure was repeated, but using syphilitic sera in similar proportions.

In this way two series of tubes were arranged, and standing at room temperature the effects were visible to the naked eye. The majority of the syphilitic sera more or less quickly resolved the agglutinated corpuscles, which fell away from the red clusters (adherent to the wall of the glass tubing), and subsiding to the bottom of the tube left a deposit of red corpuscles and a clear supernatant fluid. On the other hand, the majority of the presumed normal sera remained unresolved, and only after one or two days became brownish in colour and haemolysed by the slight acidity of the ferric chloride solution. This difference in resolving power appeared to persist, though retarded in speed, after heating the sera to 60° C. for 30 minutes.

In these comparison experiments no attempt was made to standardise the sera as regards complement content, nor were their ages since blood coagulation kept uniform. I also undertook no tests to ascertain whether the effects were due to a greater avidity for iron salts of the syphilitic sera, but the impression arose that the greater resolving power of the syphilitic sera was due to a greater content of some substance in them. Whether this difference can be elaborated into a test for the disease is a further point of interest which the future may decide.

London, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A CASE OF MERICISM.

BY JOHN D'EWART, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

MERICISM, or rumination—physical, not mental—is sufficiently rare to warrant the recording of the following case.

The patient, unmarried, consulted me on account of subacute arthritis. On her first visit she complained of eructations of food, and thinking this to be due to the administration of salicylate, an alkali was added to the medicine without effect—in fact, the eructations were worse. As the result of a demand for details of the condition the following history was obtained. The eructations come on a quarter of an hour after food and last for about two hours; they are usually accompanied by the actual return of more or less food; sometimes this could be swallowed, but often the return was so much that it was spit out of the mouth. The food at the end tasted just the same as at the beginning, and there was no control over the return or over the amount. All meals gave the same result, but milk and lemonade were very bad, and liquids were worse than solids.

The patient is 22 years of age, has had no serious illness, and has been troubled with rheumatism for three years, also with her "nerves." Two years ago she consulted her medical attendant for these "risings," and he told her she had acid dyspepsia, and for some months treated her accordingly, with no effect. The condition is worse at some times than others, being particularly bad if she is worried or excited—for example, the fear of leaving home on account of her rheumatism she thinks is the cause of the condition being worse now. As regards the family history, her father, mother, and two sisters have never been troubled in this way; her father is an only child, and his father and mother never had any trouble of the kind to his knowledge. Her maternal grandparents were also free, as were also her maternal uncles, aunts, and cousins. The known family history extends to 32 persons.

Assurance that there is nothing to worry about, and that the condition is more interesting than dangerous, has already made a great improvement, though no meal has as yet gone by without some regurgitation.

Manchester.

A CASE OF CEREBRAL TUMOUR PRESENTING AN UNUSUAL "CROSSED REFLEX."

BY E. B. GUNSON, M.D. EDIN.,
RESIDENT MEDICAL OFFICER, WEST END HOSPITAL FOR NERVOUS DISEASES.

THE patient, a male aged 15 years, was admitted to the West End Hospital on May 6th, 1912. Two months before admission he suffered from loss of speech, loss of memory, and mental dulness, without loss of consciousness. The symptoms lasted 14 days, when he appeared to recover completely and returned to work. He was well for four weeks when the symptoms recurred.

On admission the patient had not spoken for a week and had vomited once, before breakfast. The face was expressionless; he took very little notice of his surroundings. He gave his name and address correctly, but showed no further inclination to speak; he understood what was said to him and carried out simple instructions. There were no abnormal movements. Well-marked optic neuritis on right side; no muscular weakness; no incoördination.

Reflexes.—Superficial: Abdominal and cremasteric very active, equal on the two sides; plantar, feeble double flexor response; Oppenheim's reflex and Gordon's paradoxical reflex present on the left side only. Deep: knee-jerks exaggerated equally; ankle-jerks and supinator jerks brisk and equal; slight ankle clonus right side; no patellar clonus. Organic: incontinence of urine on two occasions.

Vaso-motor.—On eliciting the abdominal reflex along the area touched there developed in about half a minute a line of extreme pallor which lasted two minutes and gradually faded; at no time was there any suggestion of redness.

The boy became very dull and refused to speak, but took food well. Optic neuritis increased and affected the left disc. The left knee-jerk became more active than the right. An occasional extensor plantar response was obtained on each side; the reflex, however, was almost constantly flexor.

Diagnosis of cerebral tumour involving the right frontal

Reproduction of photograph showing "crossed reflex.

lobe was made, and on June 6th Mr. C. A. Ballance performed craniectomy over this region. There was no obvious increase of intracranial pressure. The dura was opened, but no tumour was found. The wound rapidly healed. The patient became very suspicious, resented interference, and frequently refused food. The knee-jerks diminished, and on June 24th the following reflex was noticed for the first time. On grasping firmly the quadriceps extensor muscle with the thumb and fingers of one hand immediate flexion at the contralateral hip-joint took place. The reflex was present equally on each side; no response was produced by stroking the skin of the thigh or by percussion of the muscles or bones (see figure). There was no movement at the hip-joint

on the ipso-lateral side, but dorsiflexion of the great toe resulted on this side. The other reflexes remained unchanged.

On July 13th the patient's mental condition is unaltered. The optic neuritis has given place to commencing atrophy. The knee-jerks are again active. The crossed hip reflex is still present and is constant.

I am indebted to Dr. E. D. Macnamara, under whose care the patient is, and to Mr. Ballance for permission to record this note.

Reviews and Notices of Books.

Diseases of Infants and Children. By HENRY DWIGHT CHAPIN, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; and GODFREY ROGER PISEK, M.D., Professor of Diseases of Children, University of Vermont. Second edition, revised. London: Baillière, Tindall, and Cox. 1912. Pp. 636. Price 18*s.* net.

THIS text-book is well adapted for the use of students and practitioners; it is practical, lucid, and interestingly written. More detailed attention is given to the general condition of the normal child than s usually found in text-books on the diseases of infants and children—the several diagrams illustrative of the relative weights and heights of groups of boys and girls in America are examples, and further indications are present of due regard to the psychology of the child. The directions as to the feeding and clothing of infants and young children are clear and practical, and all matters hygienic are fully considered.

In treating the various methods which are used in the feeding of infants as a whole the general attitude is thoroughly sound, and such as to commend itself to those interested in this branch of knowledge. Thus it is pleasing to find that considerable stress is laid upon the individual feeding of infants. The authors point out that the varying factors obtaining in each case must be considered, and no routine method must be adopted. The importance of breast feeding is emphasised and many details as to the management of the breasts and as to the character of the milk itself are given. Artificial feeding is also fully considered, especially the details of percentage feeding, which had its origin in America. The authors very justly point out that although the adjustment of the percentage composition of the food is of great importance, it cannot be regarded as the panacea for all nutritional disturbances; in fact, its chief virtue lies in the educational advantages which a knowledge of this method affords to those who have mastered the details. The amount and number of times of feeding are, perhaps, not adequately defined, but in the few instances which disprove the general rule the figures given suggest an appreciable degree of over-feeding—at any rate, according to our standards, and probably to those for most countries. The amount of food, the frequency of feeding, and the degree of dilution are, indeed, considerably greater than those found most satisfactory here in England, especially after the first few weeks of life.

Some of the diseases of infants and children are dealt with extremely briefly, although the remarks usually cover the most essential points; this is especially the case in dealing with those troubles which are not peculiar to children but are common to adults, and it would appear that in this respect the book is intended to be used rather as an adjunct to a text-book of general medicine than as a complete treatise on the diseases of infants and children. Under the treatment of diphtheria intubation is advocated in place of tracheotomy, which, the authors say, is now very rarely practised in America, and is performed only in those cases where intubation has failed. The process of intubation is fully described and illustrated with photographs. A valuable feature of the book consists in the description of the more important methods used in practical pathology in connexion with the diseases of infants and children. Thus the main points in the carrying out of the Wassermann reaction and the meaning of the various steps are clearly and concisely explained. Most medical students and practitioners know the use of this and other tests, but very many do not realise the principles upon which these methods are based, and although such teaching is an excrescence on the work it has its value.

The section covering diseases of the heart is disappointing and hardly commensurate in detail and extent with the importance of the group of diseases in childhood. For instance, one short page is devoted to the whole subject of myocarditis, surely one of the most important of pathological conditions affecting the developing heart; while under the heading "Diseases of the Pericardium," a subject itself most needlessly curtailed, there is practically no mention of pyo-pericardium, its differential diagnosis from hydro-pericardium, or its treatment.

Taking this new work as a whole, we may say that it is neither better nor worse than most of its fellow volumes on the same subject, which issue with unfailing regularity from each and every school of medicine in America. It certainly embraces no new doctrines which need strain our allegiance to our old transatlantic favourites, much less to the many excellent text-books of British origin. It is copiously illustrated by instructive diagrams and plates, which refer not only to diseases and diseased conditions but also to apparatus, including some designed by the author, notably an indiarubber spool for drainage in empyema and a urinal for collecting specimens of urine from infants of both sexes.

Modern Science and the Illusions of Professor Bergson. By HUGH S. R. ELLIOT. London: Longmans, Green, and Co. 1912. Pp. 257. Price 5*s.* net.

IN the preface which he contributes to this volume Sir Ray Lankester expresses his concern that an unmerited importance should have been attached to M. Bergson's writings by a section of the English public "misled by the ingenious and systematic advertisement of M. Bergson by those who amuse themselves with metaphysical curiosities." This is one way of describing thinkers of the distinction of the late Professor William James, and will prepare the reader for the matter and style of the work which has won Sir Ray Lankester's commendation, while Mr. Elliot's title has already done the same. The aim of the work, as explained by the author, is to investigate those portions of M. Bergson's philosophy, and those portions only, which profess to be founded on facts—"on gross material facts," as Mr. Elliot puts it with an entirely proper desire to leave no doubt whatever as to his meaning—and which, therefore, come within the province of science. All speculations not controllable by facts of this quality are condemned and rigidly excluded from the scope of Mr. Elliot's inquiry. His antimetaphysical bias, however, appears to have proved too strong for him in some places, where, instead of adhering to his plan, he gives a good deal of space to the discussion of what he considers "foolish puerilities," and to criticism of the philosophic thinkers who do not share his own belief that "the whole universe is explicable by physical laws," and that "every human achievement in science, commerce, and the arts has been reached solely by means of physical law."

We are far from saying, however, that there is no room for Mr. Elliot's restatement of the accepted position of materialism, but the pages which it fills might have been

occupied, having regard to his stated intentions, by a detailed attempt to meet M. Bergson's denunciations of the mechanistic explanation of life. To take one typical instance, M. Bergson in "l'Évolution Créatrice" lays stress on the remarkable fact that in organisms so far apart as vertebrates and molluscs we find the visual organ constructed on the same intricate plan, with retina, lens, and cornea, and he very pertinently asks how the occurrence of the same complex structure on two divergent lines of evolution is to be accounted for on any theory of accidental variation. Mr. Elliot considers that he disposes of the difficulty by saying that "it is not stranger than any other of the wonderful facts of biology," and that anyhow, since the only practicable ways of focussing light are by a lens and by a pin-hole, it is mathematically an even chance whether vertebrates and molluscs developed the same kind of eye or different kinds. We do not feel that this is quite satisfactory. The point at issue is very definitely one of those with which M. Bergson's critics might be expected to deal, as touching facts within the province of science.

We have read this book with considerable interest. Despite the exposed nature of some of Professor Bergson's defences we do not think that the French philosopher has been so completely disposed of as the author's school of thought will hold. But none the less we have here a refreshingly outspoken contribution to the greatest of debates.

LIBRARY TABLE.

The Gateways of Knowledge: An Introduction to the Study of the Senses. By J. A. DELL, M.Sc. Vict., Assistant Master, Sexey's School, Bruton, Somerset. With 52 illustrations. London: Cambridge University Press. 1912. Pp. xii.–172. Price 2*s.* 6*d.*—This little work is one of the "Cambridge Nature Study Series," and the preface is written by Mr. Hugh Richardson, the general editor of the series. The author—in 89 exercises—makes a study of the senses, a subject that is beginning to interest the rising generation of schoolmasters. The exercises are such as can be done in the class-room. The book is intended for use in higher primary and lower secondary schools—that is to say, for pupils of about 12 to 15 years of age. It is claimed that "complete instructions are given for these exercises so that the book shall be intelligible in the absence of a teacher. ..... The proposed practical work is not only what might be done by eager boys and girls on half holidays, but what can be done by every pupil in the course of ordinary school work." There are 52 illustrations to aid the text, which treats of the following subjects: Observation, brain nerves and sense organs, touch, heat, cold, pain, machinery and experience of movement, taste, smell, sound and hearing, sight, eye, experience of sight, action and memory. In each exercise the materials required are given; then follow the instructions and a series of supplementary exercises or questions. The work will prove useful to teachers, but we doubt if all the practical exercises it contains can "be done by pupils in the course of ordinary school work," as Mr. Dell thinks. Be this as it may, Mr. Dell has rendered excellent service by his publication, which will be useful also to medical students, some of whom ought to know more than they do of the physiology of the sense organs. But there are some inaccuracies. For instance, on p. 9 we find "the more delicate 'internal ear' where the actual hearing takes place"; and on p. 14, "if the brain of a living animal is damaged it can no longer feel or act and may very probably die." The illustration of a nerve fibre (Fig. 6, p. 15) is misleading. We very much doubt also if many school boys can be brought to appreciate fully Weber's law. In the diagram of Le Cat's experiment the shadow of the pin-head lies below the level of the pupil. These things should be put right in a later edition.

Index of Practical Nursing. By J. BASIL COOK, M.D. Vict., D.P.H., Senior Assistant Medical Officer, Kensington Infirmary. London: Baillière, Tindall, and Cox. 1912. Pp. 166. Price 2*s.* net.—The title of this useful little book sufficiently tells its story. In alphabetical order for easy reference instructions are given as to all the details of preliminary attention to cases; the nurse's duties before, during, and after operations; the care of instruments, their preparation for operation and cleaning afterwards; the rules and cautions for administering various kinds of baths; the preparation of medicated baths; poultices, enemas, and various kinds of topical applications; the application of splints and bandages; the passage of catheter and testing of urine, and such surgical first aid as may well fall to the nurse. The book is practical and convenient, and contains many details that are rarely to be found in a text-book.

Anleitung zur Funktionsprüfung des Ohres. (*Prüfung des Gehör- und Gleichgewichtsapparates.*) *Für die Praxis dargestellt.* Von Dr. A. SONNTAG und Dr. H. J. WOLFF in Berlin. Mit einem Vorwort von Professor Dr. G. BRÜHL. Berlin: S. Karger. 1912. 19 abbildungen. Pp. 69. Price 2.50 marks.—This is a short *résumé* of part of what is known about hearing tests and is quite clearly written and carefully compiled. It is not to be expected that the authors would have anything novel to report as to hearing tests. But it was to be hoped that some notice would have been accorded to methods such as that of Marage of testing with syrens; they are, however, not mentioned. Almost half of the work is devoted to testing terminations of the vestibular nerve, the methods of Bárány and others being brought together. Certainly there is but little of importance omitted.

MISCELLANEOUS VOLUMES.

Now that the air is heavy with State medical service under the Insurance Act various alternative propositions for a national medical service are being suggested. The *Dawn of the Health Age*, by Dr. BENJAMIN MOORE (London: J. and A. Churchill; Liverpool: The Liverpool Booksellers' Co., Limited. 1911. Pp. 204), upon which we commented in a leading article in THE LANCET of April 22nd, 1911, p. 1090, is now published in a paper-covered edition at the price of 1*s.*——In *The Six Cardinal Points and After; A National Medical Service* (Liverpool: Philip, Son, and Nephew, Limited. 1912. Pp. 21. Price 3*d.* net), Dr. R. J. IRVING also proposes a scheme whereby he believes that a satisfactory salaried national medical service could be established. He first points out that while no business man would take the risks of fire or burglary insurance without being certain of a fire brigade or a police service, the Government walks into health insurance knowing that there is no organised system for protecting health individually, but that, on the contrary, such assistance as has hitherto been casually rendered by medical men may be withheld owing to the unsatisfactory terms offered them. He makes a distinction between individualistic Socialism and communistic Socialism, the first being altruistic, the second parasitic. Dr. Irving, like Dr. Moore, appears to consider that a whole-time salaried national medical service would prove the solution of the medical problem, and he adds that "medicine also is essentially a calling suitable for salaries." He submits a scheme for such a service based on districts with 100,000 people, which, allowing one doctor for every 2000 people, would call for 50 practitioners. He does not explain, however, how such a scheme would work in sparsely

inhabited districts. His plan does not materially differ from that propounded by Dr. Moore save in the fact that it is more sketchy. Incidentally he considers the six cardinal points of the British Medical Association "unbusiness-like, impolitic, contentious."——A handy little pamphlet giving in a few words the main outline of the National Insurance Act, presumably for the instruction, not only of the persons who will become insured, but also of those, a numerous class, who are otherwise affected by it, who possibly desire to discuss it, and who in fact know very little about it, is *National Health Insurance, a Plain Exposition of the Act for Employers and Employed*, by J. T. RICHARDS, B.Sc., M.B.Edin., chairman of Health Committee, Battersea Borough Council (London: Wm. Pull and Co. Second edition. 1912. Pp. 16. Price 2*d.*). Dr. Richards deals only with health insurance, and does not discuss the part of the Act which is concerned with unemployment, and a modest note at the end explains that the writer is not a lawyer, and has not submitted his booklet to one. In form he puts himself in the position of the insurable person and discusses what his payments are to be, how they are to be made, how his benefits under the Act are to be obtained, and what they will be in the various circumstances in which benefits are provided. It will be gathered from the above and from the position occupied by the writer that he deals with no controversial topics affecting his profession in connexion with the Act, but simply explains it for those who may desire a brief exposition.——Another pamphlet bearing on this burning topic is *The National Insurance Act Criticised and Reviewed in Plain and Popular Language*, by H. E. JONES (Govan: John Cossar. 1912. Pp. 80. Price 6*d.* net). Though it is not so stated on the title-page, the author is a medical man. He starts by admitting that the Insurance Bill was "inspired by a generous and sympathetic heart, studied by an able mind, and drawn up with regard to all the minute details of a legal document." But on examining its provisions, both as regards medical benefit and unemployment, which he does in a style as racy as it is trenchant and logical, in most of the points in which it seriously affects various classes of the public he finds it wanting. The pamphlet is a reprint of articles which originally appeared in the *Govan Press*.——The National Insurance Act has two outstanding features: the extreme complexity of its provisions and the enormous number of persons and the great variety of classes affected by it. It is a long Act, involved and often obscure in the wording of many of its provisions, so that each section has to be read in the light of some other section, or as explained by a schedule, and this involves constant cross reference. These considerations have led Mr. H. Wippell Gadd to compile his *Guide to the National Insurance Act, 1911, with Notes and Index* (London: Effingham Wilson. 1912. Pp. 140. Price 1*s.* net), in which he assembles, so to speak, these *disjecta membra*, doing the reference and cross reference for the reader. The subjects of medical benefit, sanatorium benefit, and maternity benefit are treated fairly fully in pp. 19–32, with as much clearness as the involved nature of the subject permits.

JOURNALS AND MAGAZINES.

The Journal of Hygiene. Edited by G. H. F. NUTTALL, J. S. HALDANE, A. NEWSHOLME, C. J. MARTIN, J. C. G. LEDINGHAM, and G. S. GRAHAM-SMITH. Vol. XII., No. 2. June, 1912. Cambridge University Press. Price 7*s.* 6*d.*—Newman, Robinson, Halnan, and Neville describe some experiments to test the relative digestibility of white and "standard" breads. Each of the four individuals who took part in the experiments consumed approximately the same amount of bread for seven days. Although the time was too short to yield nutrition balances upon which definite conclusions can be based, the effects of bread diet upon the metabolic balance-sheet are not without interest and are discussed in the paper. As measured by energy and protein the degree of absorption in different individuals showed marked uniformity. The results, as a whole, lend no support to any extreme view as to the advantages or disadvantages possessed by standard bread. With regard to the availability of their total energy white bread and standard bread differ but little. With regard to protein there is a distinct advantage on the side of white bread, some 3·5 per cent. more of its nitrogen-content being absorbed. Harden and Lane-Claypon describe observations on the occurrence of ferments in the sterile milk collected by the milking-tube from cows and goats. They find that the presence of peroxidase and catalase can be demonstrated in milk obtained by catheter from both goats and cows. The catalase content of goats' milk is apparently higher than that of cows' milk. They further find that the reduction of methylene blue does not occur in these specimens, at any rate within many hours, and that Schardinger's reagent is not reduced by goats' milk, but is often reduced by cows' milk. Ledingham and Dean contribute a paper on the Action of Complement-fractions on a Tropin-B. Typhosus System with Comparative Hæmolytic Experiments. The term "tropin" is employed to designate the antibody in an inactivated immune serum which, in the absence of complement, is able to effect sensitisation of micro-organisms for phagocytosis. The paper is illustrated with a number of diagrams, and contains many interesting tables. The results are difficult to summarise shortly, and the paper should be studied by all interested in the subject. Penfold contributes an interesting paper on bacterial mutation. He describes at length numerous observations on bacteria from fæces producing colonies having acid papillæ on lactose-agar plates, and the subcultures obtained from such papillæ. He comes to the conclusion that lactose mutation appears to be a common property of many bacterial species, and has practically no specific differentiating value at all. It is yet premature to say whether every member of any species possesses this property of mutating when grown on agar. The power to vary quickly in respect of dulcite appears to belong to every strain of B. typhosus. Tebbutt describes observations on the bacteriology of asylum dysentery, in which he found dysentery bacilli of the mannite-fermenting type. They could be divided into two subgroups, according as (*a*) they do or (*b*) do not (1) ferment sorbite, and (2) form indol from peptone broth in six days. Several attempts to infect a monkey with sorbite-fermenting strains were unsuccessful. No dysentery bacilli were found in flies infesting the surroundings of chronic and acute cases of bacillary dysentery. Glynn and Lewis describe experiments on the detection of anthrax spores in industrial material. After giving a detailed summary of the work of previous observers they recount their own experiences. They conclude that the most certain method is by the inoculation of guinea-pigs with the centrifugalised deposit of the watery extract of the material. They found anthrax spores by the inoculation method in 21·3 per cent. of 141 samples of industrial material, supposed to have produced anthrax in Liverpool amongst those who handled them. Of these samples 28·6 per cent. were from hides, 22·2 per cent. from wool, 20·6 per cent. from hair, and 7·1 per cent. from bones. Anthrax spores were found in one sample of "disinfected" hair, and in a sample of peameal used for feeding cattle confined to a shippon, one of which died from anthrax. The meal was probably infected from the sack.

THE BRITISH MEDICAL ASSOCIATION.

EIGHTIETH ANNUAL MEETING IN LIVERPOOL.

THE annual banquet of the Association was held in the Philharmonic Hall, Liverpool, on the evening of July 25th, under the chairmanship of the newly elected President, Sir James Barr. About 350 members and guests were present, and thanks to the energy and hospitality of the local committee and dinner secretaries the evening was a great success. Among those supporting the President were the Lord Mayor of Liverpool (Lord Derby), the Bishop of Liverpool (Dr. Chavasse), Professor Robert Saundby, Sir John W. Byers, Dr. G. A. Gibson, Mr. F. T. Paul, Professor Armstrong, the chief office-holders of the British Medical Association, the mayors of neighbouring boroughs, and many well-known citizens and leading local representatives of medicine. The toast of "The City and University of Liverpool" was proposed by Dr. J. A. Macdonald, chairman of Council of the Association, who congratulated Liverpool upon the great progress which had taken place since their last annual meeting there 29 years ago. Lord Derby, in reply, said that the University and corporation could justly claim to merit the appreciation of the medical profession, and instanced the success of the School of Tropical Medicine and the extensive work undertaken by the city in the matter of housing reform. The Bishop of Liverpool, who proposed the toast of "The Association" in a charming and humorous speech, referred to the direct connexion of his own family with medicine for 200 years, and said that the thought of that profession being on half-pay, starved, and straitened was abhorrent to the mind of every Briton. The reply was entrusted to Dr. E. J. Maclean, chairman of Representative Meetings, who ably outlined the position of the Association in relation to the Insurance Act. He asked that the public should grasp that the medical profession was not losing sight of their interests in the matter. There were misunderstandings about the breaking off of negotiations; by this term they did not mean that for all time medical men would boycott the Act. Something, however, must be done to dispel the distressing atmosphere of uncertainty, and they wanted to know what services they were going to be called upon to perform. Mr. Robert Jones gracefully proposed the health of the guests, which was responded to by Mr. Helenus Robertson (chairman of the Mersey Dock Board), and Professor Albert Abrams, of San Francisco. Finally, the toast of "The President" was submitted in warm terms by Sir John Byers, and Sir James Barr replied.

The National Temperance League again held a successful breakfast during the annual meeting. This took place in the Walker Art Gallery on the morning of July 25th, under the chairmanship of Mr. Alexander Guthrie, a Vice-President of the League, who was supported, amongst other members of the medical profession, by Sir James Barr, Dr. F. W. Mott, Dr. Dudley W. Buxton, and Mr. T. H. Bickerton. The chairman, in welcoming the company, referred to the progress which Liverpool had made during recent years in fighting the evil of intemperance; and Sir James Barr pointed out that people generally were becoming more temperate, and that medical men were prescribing less alcohol. Dr. Mott, in the course of a very interesting address, urged the necessity for tolerance among temperance reformers, and showed how pauperism, insanity, and tuberculosis were co-related with drunkenness. He was certain from his own experience that there was already a steady diminution in the amount of disease due to alcoholism. The breakfast ended in time for members to attend the meetings of the various scientific sections.

The Continental Anglo-American Society held its annual luncheon this year on July 25th at the Midland Adelphi Hotel, Liverpool. The winter dinner of this society is usually held in Paris and the summer luncheon in England during the annual meeting of the British Medical Association. The chair was taken on this occasion by Sir StClair Thomson, one of the founders of the society. Lunch was served in one of the cloisters which surround the central court of the new hotel, and there was a good gathering of members and guests. After the chairman and Dr. F. M. Sandwith, another original member, had welcomed those present, Dr. E. J. Maclean and Professor H. S. Birkett (Montreal) replied on behalf of the visitors. The society, as its name implies, forms a pleasant social link between the scattered English-speaking members of the medical profession who practise throughout the continent of Europe and in its adjacent countries. The retiring honorary secretary, Dr. Leonard Robinson, to whom the society owes much of its success in recent years, was present at the luncheon, as well as his successor, Dr. Robert Turner.

On Friday afternoon, July 26th, a Congregation of the University of Liverpool was held in the Philharmonic Hall for the conferment of honorary degrees. The Chancellor of the University, Lord Derby, who presided, was supported by a large company, many of whom were in academic costume. A procession was formed, consisting of the University authorities, representatives of the British Medical Association, and civic dignitaries, and this proceeded to the platform, where the recipients of the honorary degrees were presented one by one in laudatory terms to the Chancellor. The degree of Doctor of Laws was conferred upon Sir James Barr (Liverpool) and Sir William Macewen (Glasgow), and the degree of Doctor of Science upon Dr. George Armstrong (McGill University), Dr. G. A. Gibson (Edinburgh), and Mr. F. T. Paul (Liverpool). Before the proceedings closed Dr. E. J. Maclean, on behalf of the British Medical Association, presented Lord Derby with the scroll of honorary membership of the Association.

A large factor in the success of the eightieth annual meeting of the Association was the hospitality provided by the medical profession of Liverpool. The local committees gave themselves up to the entertainment of their guests, and individual medical men and public bodies took an active part in welcoming the visitors to their city. Each day from Tuesday to Saturday had a full programme of festivities suited to all tastes. Large numbers attended the soirée on Wednesday evening and the ball on Friday, and the afternoons were filled with garden-parties, visits to Atlantic liners, tours round docks, works, and warehouses, and pleasure trips of every conceivable kind. All who attended the Liverpool meeting will remember it for the excellence of its social programme and for the warm welcome given by their colleagues of that city. Our thanks are due to them and to the executive of the British Medical Association for their courtesy and hospitality to our representatives.

Professor J. L. Todd, McGill University, Montreal, President of the Section of Tropical Medicine of the British Medical Association, entertained the members of the section to luncheon in the University Club, Liverpool, on Friday, July 26th. Among those present were: Dr. J. W. W. Stephens, Professor R. Newstead, Dr. W. T. Prout, C.M.G.,

Dr. Fantham, Dr. H. Seidelin, Dr. R. Stenhouse Williams, Lieutenant-Colonel J. K. Ritchie, Major S. R. Christophers, Captain Williams, Captain Riley, Professor Weinberg (Pasteur Institute, Paris), Dr. F. M. Sandwith, Dr. Law, Dr. E. P. Minett (Demerara), Dr. Bayon, and Dr. B. Blacklock, joint honorary secretary of the section. Mr. Alan Milne, C.M.G., Secretary of the Liverpool School of Tropical Medicine, was also present.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 24TH.

President: Professor T. R. GLYNN (Liverpool).

The PRESIDENT opened the proceedings after a few words of welcome by calling upon

Dr. DAVID B. LEES (London) to open the discussion on

The Diagnosis and Treatment of Early Cardiac Complications of Rheumatism,

which he did under the following headings: 1. "Acute and subacute rheumatism" is a microbic infection, most common and most virulent in childhood, less frequent and usually less virulent in adolescents and young adults. 2. There is but one symptom which is present in every case of the disease. Arthritis, nodules, endocarditis, pericarditis, pleurisy, tonsillitis, erythema, chorea, and all other rheumatic symptoms may be present or absent, but *dilatation of the left ventricle is invariably present.* This is caused by toxæmia or myocarditis or both, and is a very early symptom. 3. The dilatation can be easily detected by careful percussion rightly performed. It is quite easy to determine the sloping line of dulness of the edge of the left ventricle in the fourth and fifth left interspaces, and that of the right auricle in the fourth right interspace. 4. The first essential for the successful treatment of the cardiac implication of rheumatism is prolonged rest. 5. The second essential is an adequate antirheumatic medication, the most useful being a combination of sodium salicylate and sodium bicarbonate, one part of the former to two of the latter, in adequate and increasing doses. 6. During the treatment by salicylate it is necessary (*a*) to prevent constipation, (*b*) to keep the urine slightly alkaline, (*c*) to stop the medicine when vomiting or other symptom due to salicylate occurs, but to resume it after a few hours in a dose one-half the size of the dose last given, and soon to increase the amount as far as possible. 7. When the dilatation (with or without endocarditis) is great, and especially when pericarditis is present, the medicine should be freely given, and an ice-bag should be kept permanently over the præcordial region, with due precautions against general chill. Careful nursing is essential. The application of leeches is sometimes beneficial. The speaker urged free administration of sodium salicylate, and had attained a maximum of 600 grains with 1200 grains of sodium bicarbonate daily, the latter being added to the point of alkalinisation of the urine to prevent acidæmia. In pericarditis this treatment should not be suspended as was usually taught. He believed that inadequate salicylate treatment was responsible for most of the ill effects in cardiac complications.

Dr. ALBERT ABRAMS (San Francisco) objected that cadiac dilatation could not be regarded as pathognomonic of acute rheumatism, inasmuch as it occurred in nearly all acute infectious diseases. It was a neuro-muscular affection associated with depression of the vagus. He recommended pilocarpine to maintain the tone of the heart. Salicylate of soda was a marked depressor of the vagus and itself produced cardiac dilatation. Antipyrin acted in a similar way. In rheumatism dilatation resulted both from the toxin of the disease and from the salicylate, which pilocarpine corrected. He thought also the effect of the ice-bag over the præcordium was to induce cardiectasis. He agreed that salicylate of soda was inadequately administered. Its effect was both curative and diagnostic, for rheumatic fever speedily yielded to it, whereas in other fevers patients could not tolerate it.

Dr. F. J. POYNTON (London) said that he had some years ago enjoyed the privilege of working with Dr. Lees on this subject. His own observations did not convince him of the constancy of cardiac dilatation in early rheumatism, neither was he impressed with the efficiency of salicylates in preventing or correcting cardiac complications. He fully agreed as to the need for protracted rest in these cases, beyond that which could be afforded in the wards of a general hospital, so that there was as great need for sanatoriums for cardiac cases as for consumptives. He drew attention to the frequency with which mitral stenosis developed after repeated attacks of chorea and to the numerous cases in children when the heart only was affected, sometimes with tonsillitis, but without painful arthritis, the attack being followed by persistent tachycardia and sometimes by mitral stenosis. Nothing so effectively put back these cardiac cases as over-exertion, and that was where ordinary convalescent home treatment failed.

Dr. CAREY COOMBS (Bristol) mentioned experiments with several strains of the rheumatic organism, which produced the same effects in all animals as in man. The polygraph showed a lengthening of the auricular contraction interval only, which, however, was not found in the very early stages. Early diagnosis of heart complications could be made only by routine examinations frequently repeated. Recurrences he attributed to underfeeding, fatigue, and damp. He was still hopeful as to preventive measures diminishing cardiac disease.

Dr. F. S. LANGMEAD (London) said that of rheumatic cases admitted to hospital only a minority were first attacks, though previous ones might not have been recognised. Rheumatic anæmia, vague limb pains, and even tonsillitis, received scant attention, though they might be associated with the initiation of cardiac disease. Tonsilllitis occurred with four times the frequency in rheumatic subjects compared with others. The origin of rheumatic heart disease was still wrapped in mystery. Between 3½ and 6½ years of age 2·6 per cent. of children examined showed signs of cardiac trouble, while between 6½ and 14 years 6·9 per cent. were affected. This was in apparently normal school children where no rheumatic history could be elicited. He could recall only 18 instances of rheumatism in children without permanent damage to the heart. Detection of early rheumatism was undoubtedly most important, but was at present difficult, as little was known about it. No provision as yet was made for the protracted and adequate treatment of poor children.

Dr. F. S. PRICE (London), whose paper was read by Dr. JOHN HAY (Liverpool), insisted on the importance of early recognition and prolonged treatment and rest in rheumatism. In childhood arthritis was slight or absent, whereas the organs were prominently affected. Heberden's nodes, purpura, tonsillitis, and chorea were constantly associated with endo-, myo-, or peri-carditis. Early cardiac physical signs were slight and vague. Intermittence, heart-block, and auricular fibrillation were rare.

Dr. J. F. HALLS DALLY (London) said that dilatation depended on the extent of the infective process. Rheumatism induced early dilatation. Strychnine and sparteine sulphate improved the heart's tone. Pallor sometimes connoted endocarditis, but there were many other causes. The dose of salicylate, he thought, should be carefully adjusted to the patient. Partial heart-block was common and transitory.

Dr. WILLIAM HUNTER (London) said that the origin of rheumatism was still vague. It was evidently an acute infective disease, and the channel of entry was frequently the tonsils and adjacent naso-pharyngeal region, affections of which parts were closely associated with rheumatism. Streptococcic organisms produced pseudo-rheumatic manifestations, and were derived from various septic sources.

Dr. T. R. BRADSHAW (Liverpool) was inclined to dispute the use of bicarbonate of soda, and asked how the difficulty of its insolubility was met. He thought, also, one could not insist on the constant presence of dilatation of the left ventricle, seeing that in the normal child the apex was in the nipple line or even outside it up to 12 years. As to prolonged rest, he found that patients who were blistered remained 14 days longer in hospital than those treated otherwise. With regard to statistics, however, he said, "You can do anything with, and nothing without, them."

Dr. LEES, in reply, said though he held that dilatation of the heart was invariably present in acute rheumatism he did not suggest that it was absent in other acute affections. In regard to experimental evidence, he contended that the effects of drugs in disease were not comparable to those produced in a healthy body. A syphilitic baby fattened on

pulv. hyd. c. cret., but a healthy one would not. Salicylate of soda was not a depressant to a rheumatic patient, and ice over the præcordia checked the degenerative changes which induced depression. With due respect to Dr. Abrams, he could not accept his conclusions. It was not right to say that any method of treatment conscientiously used was criminal. Dr. Poynton was sceptical as to the curative effect of salicylates in acute cardiac affections. Dr. Lees contended that the dose usually given was too small, and in that sense he agreed with Dr. Poynton as to its results. Dr. Carey Coombs had made valuable investigations which would be welcomed when published. He agreed that the overlapping right ventricle and receding left in mitral stenosis vitiated an estimate of dilatation, but he was not speaking of such, but of initial changes in a previously healthy heart. In reply to Dr. Bradshaw, full doses of salicylate could alone be expected to help chorea, as it was an organic disease. No one would expect benefit from small doses of potassium iodide in cerebral syphilis. He could not defend his mixture with the large dose of sodium bicarbonate as agreeable, but the children took it. He differed as to the apex being outside the nipple line in children normally. Certainly after seven years the apex was never normally outside the nipple.

SURGERY.

WEDNESDAY, JULY 24TH.

President, Professor RUSHTON PARKER (Liverpool).

After a few introductory remarks by the PRESIDENT, referring to the life work of the late Lord Lister,

Mr. W. HARRISON CRIPPS (London) introduced a discussion on

The Treatment of Carcinoma of the Rectum.

He said that the first planned excision of the rectum was performed by Sir James Paget in 1878, and referred to the fact that the late Sir Herbert Allingham introduced the operation of inguinal colotomy into this country. Referring to 445 cases in his own practice, he said that he had only met with one pathological type—viz., that of adenoid cancer. There was no essential structural difference between the most innocent papilloma and the most malignant cancer, the difference being determined merely by the direction of growth, whether into the lumen of the bowel or into the tissues of its walls. No mechanical irritation of the bowel was considered capable of causing cancer, but, as in the analagous case of the oak-galls, it must be due to a specific living germ. Mr. Sampson Handley's views as to lymphatic extension of the disease were quoted. The evidence derived from staining by muci-carmin was not accepted, and it was held that the theory of early lymphatic permeation was quite contrary to clinical evidence. A strong protest was made against removing an extensive length of bowel in early cases of disease. The good results obtained by limited operations were held to prove that such operations are quite satisfactory, as illustrated by a table of 47 cases of patients alive from 1 to 26 years after the operation. Cancer of the rectum was considered to be capable of diagnosis only by touch, the sigmoidoscope being quite valueless. A warning was given against passing the finger through tight malignant strictures. Only about one-third of the cases were suitable for radical operation. Under an anæsthetic one must be able to get above the disease and the growth must be moveable. For other cases inguinal colotomy was very valuable and extended life from an average of seven months to one of two years. Two methods of attack were possible. If the disease was within four inches of the anus a perineal operation was all that was wanted. Cases in which it was above four inches, required the posterior sacral operation, but primary union of the ends of the bowel by the latter method had never been found possible. On the other hand, some years after the posterior excision it was often possible to reunite the ends of the gut. As regarded attack through the abdominal cavity, only five or six cases came within the speaker's personal experience, and he had no enthusiasm for this method. The tendency to contraction of the scar after excision must be prevented by early use of bougies. A table of 445 private cases with the full after-history was presented. Nearly all cases of recurrence took place within three or four months of operation, and only once had he known recurrence take place after two years. A strong plea was entered for earlier diagnosis. As regarded choice of method, in 151 cases only colotomy was done, and in 107 excision. As regarded mortality, this was shown only in 108 cases, of which 8 died. Of the 100 who recovered 40 died from recurrence within a short time and 42 remained well after three years. The actual period of survival in these cases varied between three and 26 years. The date at which recurrence was observed was noted in 38 cases, and in 23 of these it was before the expiration of nine months and in only one later than two years.

Mr. C. A. MORTON (Bristol) considered that occasionally union after the posterior sacral operation could be obtained. An experiment on the dead body had satisfied him that it was impossible to bring down the upper part of the pelvic colon low enough to make a union without interfering with its blood-supply. Recurrence in nearly all cases when it occurred took place in the rectum, and, further, the functional result of most cases was bad owing to the formation of a fistula, and for these reasons the abdomino-perineal method was adopted. The increased risk of this method was admitted, and it was pointed out that this increased risk was chiefly in the male sex. Personal experience related to six cases treated by the abdomino-perineal route. In three the shock was very great, being fatal in one.

Mr. G. HEATON (Birmingham) said that only 20 to 30 per cent. of cases were suitable for radical treatment. He thought that something could be learned by the use of the sigmoidoscope. He referred to cases in which life was prolonged from two to four years after a simple colotomy. He urged the performance of a preliminary abdominal section both for exploration regarding metastases and fixation, concluding with a colotomy. The complete operation for radical removal was urged.

Mr. SINCLAIR WHITE (Sheffield) related a mortality of 30 per cent. in about 78 hospital cases. Among private cases, 32 (27 males, 5 females), 29 were treated by Kraske's method with preliminary abdominal section and three by the abdomino-perineal method. In all cases but two a preliminary colostomy was done. In 23 cases of the former the anus was preserved. In the majority a temporary fæcal fistula resulted. About 40 per cent. of cases were operable. Death occurred in six cases and 14 died from recurrence, eight of which were local. Hochenegg's perineal method was highly commended, though it involves leaving a sacral anus. It was held that wide removal of the bowel and a sacrifice of the anal sphincters must be carried out.

Mr. W. SAMPSON HANDLEY (London) replied to Mr. Cripps's criticism. He had only maintained that lymphatic permeation *might* occur at a distance of 4 to 6 inches from the growth, as proved by two cases. According to Swinford Edwards, in at least half the cases of recurrence the latter took place in the cut ends of the bowel, and this was strong clinical evidence in favour of the theory of lymph permeation. As permeation occurred equally in both directions, it did so downwards as well as upwards, which made the perineal operation pathologically unjustifiable. It was admitted that so far the mortality of the modern method was 20 per cent. A suggestion was made that a catheter should be tied into the blind end of the colon through which saline transfusion could be given. The difficulty of making a good functional union of the bowel after excision was urged.

Mr. C. P. CHILDE (Portsmouth) spoke as to the advantages of the sacral route. The lower end of the sacrum had always to be removed. Even in those over 70 years hardly any shock was experienced. An inguinal colostomy was held to be preferable to a sacral anus, and a preliminary colostomy was advised in most cases.

Mr. C. A. LEEDHAM-GREEN (Birmingham) supported the modern combined operation. He worked in two stages. In the first the bowel was divided and the upper end fixed and all the distal part down to the pelvic floor was removed and the omentum was sewn down over the intestines to the sacrum. In the second stage the usual combined operation was done.

Mr. H. J. PATERSON (London) considered that pathology had retarded clinical work in cancer of the rectum. It was not thought worth opening the abdomen to prove the presence or absence of metatasis, even if they were found in 50 per cent. It was held that there was much to be gained by inguinal colotomy in inoperable cases. In all

cases doubtful as to operability it was better not to attempt any extensive operation.

Mr. A. DON (Dundee) strongly advocated always beginning an operation for cancer of the rectum by opening the abdomen. He used spinal anæsthesia to diminish shock. Mackenrodt's incision with possible ligation of the internal iliac vessels was advocated.

Mr. JORDAN LLOYD (Birmingham) supported the older views relating to operation in rectal cancer. Only in the minority of cases should it be operated on. He laid stress on the fact that there were many different varieties of growth. Especially cases where a large mass was present, must be regarded as specially unfavourable for radical operation. His own feeling was greatly against the more elaborate and extensive operations. Doubt was thrown on the possibility of proving hepatic metatasis through a small abdominal incision.

Mr. A. LUCAS (Birmingham) urged that every case should be treated on its own merits, and a method of operation should be chosen suitable for each. He doubted the value of recent pathological work for clinical practice.

Dr. ARMSTRONG (Montreal) spoke as to the futility of attempting to unite the bowel ends after excision. He favoured the combined operation. He worked in two stages. In the first the free part of the pelvic colon and rectum were removed and the peritoneum of the pelvic floor was sewn over it. In the second stage the remaining rectum was removed from the perineum.

Mr. E. HEY GROVES (Bristol) held that the fact that in many cases hepatic metastasis could be felt through a preliminary abdominal incision made this step very desirable. Two cases were related in which local recurrence took place after a trans-sacral excision, and in which good and lasting recovery had resulted from the complete abdominal operation. He strongly supported the two-stage method from personal experience, and held, with the last speaker, that the peritoneum need not be opened during the second stage.

Professor CAMERON (Toronto) spoke in the same sense as Mr. Jordan Lloyd.

Mr. A. FULLERTON (Belfast) related a case in which the whole pelvic colon was removed by a trans-sacral route, the superior hæmorrhoidal artery being divided. He had found the sigmoidoscope useful in diagnosis when the growth was beyond reach. He thought the risk of the abdomino-perineal operation was very great.

Mr. P. NEWBOLT (Liverpool) supported Mr. Cripps's teaching, and thought that the perineal operation gave good results, and that after excision the ends of the bowel could often be reunited, years after the operation. Removal of the coccyx without any part of the sacrum was held to be enough. A case was related of a secondary growth in the sacrum occurring five years after a trans-sacral excision.

Mr. CRIPPS, in reply, said that the perineal and abdominal methods ought not to be alternatives, but rather methods each adapted to special cases. He referred to a case in which an atrophied and displaced kidney had been mistaken for cancer of the rectum as illustrating the value of the abdominal method. But he again emphasised the opinion that in cases of extensive disease it was better to be content with palliative measures than to perform a very extensive operation.

DISEASES OF CHILDREN (INCLUDING ORTHOPÆDICS).

WEDNESDAY, JULY 24TH.

President, Mr. ROBERT JONES (Liverpool).

The PRESIDENT welcomed the visitors on behalf of the local profession.

Mr. H. J. STILES (Edinburgh) opened a discussion on

The After-results of the Major Operations for Tuberculous Disease of Joints.

He said that he had always advocated and practised operative procedures in all cases in children where the disease was already far advanced. Operative measures meant procedures sufficiently radical to remove the whole of the disease. His remarks were confined to his personal experience of major operations at Edinburgh since 1901. His material comprised 205 resections, and the records had been carefully tabulated, and in as many of the cases as possible the present condition had been ascertained.

Knee.—It is in this joint that excision gave the best results. The disease could be cured; stability and weight-bearing capacity could almost be guaranteed, though at the expense of loss of movement. Operative measures directed to obtaining osseous ankylosis were most satisfactory, and with this object, after removal of the whole diseased synovial membrane, sufficient bone was removed to ensure osseous ankylosis, and firm and accurate apposition of the bones was secured by nailing them together. Cases: 63 excisions of the knee, of which 38 had been traced. Average age at operation 5 years; average duration of disease before operation 15 months; 62 per cent. were below 6 years old, the remainder under 12. In 23 cases osseous disease was present; in 32 cases there was an abscess or sinus. More than half the cases were in hospital less than 30 days after operation; primary union resulted in 53 cases. In 12 cases subsequent amputation was required; 9 of these were under 5 years old; 6 had been traced, 1 died 18 months later and 5 were still in good health; all the cases were advanced cases, and in 9 abscesses or sinuses were present at operation. There were 4 deaths; 1 from measles, the others from general or meningeal tuberculosis. Of 30 cases recently examined there was absolute ankylosis in 29, slight movement in 1. In 27 there was a little flexion; in 2 genu recurvatum; in 3 there was a tendency to genu valgum; the flexion averaged 10 degrees; in 1 case there was 20 degrees; in 1 there was 90 degrees. In those cases that had already reached the completion of the growth period, all had less than 2 inches of shortening, and the same limit was found in all cases of the primarily synovial type. In 1 case there was no shortening; in 9, less than 1 inch; in another 12, less than 2 inches; in 3, from 3 to 4 inches, and in 2, 5½ inches—in these secondary resection for deformity had been performed. To only a slight extent was the shortening more marked in cases in which excision had been performed during early childhood. In two boys of 12 in whom operation was performed at 2 and 3 years of age the shortening was less than 1½ inches. A certain amount of shortening was a distinct advantage when the knee was ankylosed, for it enabled the patient to clear the ground in walking. As a rule, patients with 1½ inches of shortening did not need an addition to the boot, and allowing for a small addition it might be stated that shortening not exceeding 2 inches was of no practical importance. Out of the 63 cases, 3 required resection for genu recurvatum, 1 for excessive flexion, and 1 for a combination of flexion and genu varum. In all there was advanced disease at the primary operation; in one the resection took place eight years later and the patient was now able to get about well without any support—she had 5 inches of shortening and had 3½ inches added to the boot. In all the cases traced the general health was good, there were no sinuses, and the patient was able to walk without any support; in only one instance was there marked lameness (a case with right angle flexion); in 15 cases the limp was scarcely perceptible after correction of the shortening.

Hip.—In this joint there was often a primary focus in the neck of the femur or acetabulum; where the disease was advancing in spite of conservative treatment excision was indicated. If sinuses were allowed to form bad results must be expected. Early excision immediately relieved the pain and suffering, restored sleep and appetite, and by rapidly improving general health enabled the patient to overcome the residual disease. It shortened the period of disability and cure was more likely to be permanent. Kocher's posterior angular incision gave the best access to the acetabulum and should be adopted. Removal of the head and neck of the femur, trimming the trochanter, and placing it in the acetabulum in the abducted position was the secret of success. Abduction was maintained by a frame, and later by plaster cases throughout the whole period of after-treatment, and gave a stable ankylosed limb. Cases: 59 cases had been operated on and 40 had been traced. Eighteen months was the average duration of disease before operation. In 45 cases an abscess was present; in 53 there was osseous disease. Only 18 cases were in hospital over two months. In 3 cases subsequent disarticulation of the hip for recurrence was required; 1 of these cases died; 5 required further operations for slight recurrence. There were 12 deaths from meningitis or general tuberculosis. In 19 cases the results were good, the general health excellent; the hip ankylosed in good position with good function and no sinuses. In 15 cases

the average shortening was 1¾ inches; the greatest shortening was 3 inches and the patient was able to walk exceedingly well. In only 2 cases was the deformity severe; one of these was the only case to require further osteotomy for deformity, and she should be able to dispense with crutches but would require a 4-inch patten on the boot.

Elbow-joint.—Of 54 cases of excision of this joint the right side was involved in 32. In 32 per cent. the disease commenced before the age of 2 years, in 67 per cent. before 5; the age incidence was low in this joint. The average duration of conservative treatment before operation was 8 months; in 14 cases the disease was primarily synovial. Of 34 cases which had been traced, 6 died from general tuberculosis; 1 case required amputation. In 10 cases the results were good; there was good range of movement and satisfactory power; in 3 cases satisfactory rectangular ankylosis; in 3 at an obtuse angle, with pronation possible in two of each class. In 7 cases the limb was somewhat flail-like, in only one of these was the function unsatisfactory. The average amount of shortening was 1½ inches, the maximum 2½ inches.

Ankle-joint.—Of 29 cases, 6 of which were primarily synovial, in 15 the astragalus was primarily involved. Thirteen cases were between 2 and 4 years old at operation, and sinuses were present in 30 per cent. Complete excision could be effected by Kocher's antero-external route; the important point was to get the right angle position without lateral deviation, and this required some trimming of the bones. Accurate and firm apposition was obtained by a long nail passing through the os calcis from the heel and on into the tibia. Of 29 cases, 25 had been traced; 3 died, 2 from general tuberculosis; in 6 cases amputation was subsequently required, 4 of these being cases complicated by sinuses; of 9 cases with sinuses 1 died, and only 4 gave good results. In 15 cases recently examined all walk well without support; in some there was, however, slight deformity. The shortening averaged ¾ inch, the maximum was 1½ inches.

The excisions were performed at an advanced stage, and the results appeared fully to bear out the advantages of excision; had the cases been treated by conservative means there would have been more deaths, a higher percentage of amputations, and the survivors would have had less useful limbs. The duration of treatment was, moreover, greatly shortened. The general health of the patients improved rapidly and the survivors were now in robust health. Mr. Stiles expressed himself as being convinced that now the profession had begun to realise the importance of early diagnosis in these cases cure would be obtained by fresh-air treatment in early stages of the disease, and such radical measures would be less frequently called for in the future.

Mr. A. H. TUBBY (London) congratulated Mr. Stiles on a classic paper worthy of the utmost attention and calculated to correct the modern tendency to ultra-conservative treatment. He directed attention to the fact that skiagraphy gave us a method of ascertaining the site and direction of spread of bone disease which must in future have a great influence on treatment; he emphasised the conclusions that in children the general resistance to tubercle was higher than in adults, but the tendency to encapsulate and limit the disease was less. Excision was preferable to erasion, since there was no need to sacrifice thorough elimination of the disease to the attempt to obtain movement. Mr. Stiles's large proportion of cases of ankylosis was owing to the fixation by screws which prevented disturbance during dressings and gave a better chance of ankylosis. He himself used screws in excision of the knee, and also mortised the patella into the two bones. A patient was better with an ankylosed knee even 4 inches short, than with a longer limb which required any form of support. In hip-joint cases excision in young children was liable to lead to dissemination, and he had never done a formal excision, though he had done local operations to remove diseased areas. In the elbow the indications for excision were more definite; in the upper limb the object was to obtain movement rather than support; conservative treatment, however, often left a considerable range of movement. In the ankle-joint he advocated conservative treatment; but in all cases in hospital work pressure on beds and the difficulty in satisfactorily treating out-patients undoubtedly caused a tendency to early operation.

Mr. R. C. ELMSLIE (London) did not consider that the excellent results obtained by Mr. Stiles, with his great skill and experience and his careful after-treatment, would lead him to advocate the use of similar measures by surgeons with less special experience. In the last six years he had seen 2000 children in London who had been treated by different surgeons, and had become a strong opponent of excision of joints. In 232 cases of knee-joint disease 89 had been excised; of these, 7 still had active disease. One had a mobile knee with good movement and good function; in 63 there was angular deformity; in 44 flexion, in six 20°–30°, in eight 30°–40°, in ten 40°–80°; in two cases, 20° of genu valgum, in another 55°; in 16 cases pure genu varum, four were between 30° and 40° and one was of 60°. Over 2 inches of shortening was present in 35 out of 89. Among special cases he would mention a boy of 10 with 6½ inches of shortening and 60° genu varum; a boy of 12 with 8½ inches shortening and 40° flexion; and a man of 30 with 7 inches shortening and 35° genu valgum. Twenty-six had had a further operation for deformity and 3 a third operation. Sinuses had been present in only about 25 per cent. before operation; the results of conservative treatment were better. In the London cases the bad results were probably due to too short a period of after-treatment. He hoped that in future, with cases brought to hospital and diagnosed at an earlier period, with better instruction of students in the use of mechanical appliances and plaster, and with the provision of special hospitals where the cases can be kept as in-patients for a long time under expert treatment, it might be possible to eliminate major operations.

Mr. G. GREY TURNER (Newcastle) considered that in special hospitals prolonged conservative treatment gave good results. At general hospitals lack of continuity of treatment and proper supervision of out-patients led to formation of sinuses and disorganisation of the joints in many cases. The primary problem, however, was the limitation in the accommodation, and he advocated the use of excision in disease of the lower limb to cut short disease before sinuses formed and to put the children as possible on the road to recovery in the limited at a bed was available.

Mr. G. H. EDINGTON (Glasgow) said that in patients treated without operation the results might be classified as bony ankylosis, fibrous ankylosis, and fairly moveable joints. Of these, bony ankylosis was most satisfactory, as they were not exposed to strain, and strain often set up recurrence in other cases through opening encapsuled deposits of disease. In hips treated by conservative means recurrence often took place, and in the knee-joint a long after-treatment was necessary to prevent deformity. If bony ankylosis was the most favourable result it was a strong argument for excision, but the cases must still be watched for many months to prevent deformity.

Mr. E. M. CORNER (London) considered some degree of deformity a natural result of such operations, and thought that deformity of the knee was more frequent after modern operations than after the old formal excision. Exaggerated deformity should be prevented by long after-treatment. Ankle-joint disease was most unfavourable, and in a very high proportion of cases ultimately required amputation.

Mr. G. C. E. SIMPSON (Liverpool) said that pressure on beds had led him to conservative methods of treatment, more especially in view of the excellent results he had seen in the clinic of the President. Careful instruction in the management of the splints should be given to the parents, and fresh-air treatment could be adopted even in the slum cases. The cases were seen at gradually increasing intervals when the parents were found to be sufficiently intelligent to follow the directions. In the necessarily long treatment the excellent Invalid Children's Aid Association of Liverpool was an inestimable factor in success. Not only did they provide splints, carriages, and good food for the patients, but they would send those that required it to the seaside for long periods. In addition they supervised the cases, saw them at their homes, and ensured proper attention and prevented irregularity of attendance and consequent relapses. Such aid associations were invaluable, and with their aid conservative treatment could lead to very satisfactory results even in advanced cases.

Mr. STILES, in his reply, considered that conservative methods were indicated in all but advanced cases; in the treatment of the latter much depended on the surgeon, and with modern methods of operation much better results were obtainable than those quoted by Mr. Elmslie. Ankylosis meant permanent cure, and bad deformity was due to failure to obtain rapid bony ankylosis. He showed a series of lantern slides illustrating some of his cases.

ELECTRO-THERAPEUTICS.

WEDNESDAY, JULY 24TH.

President, Mr. C. THURSTAN HOLLAND (Liverpool).

The proceedings were opened by the PRESIDENT, who welcomed all those present, and extended to them an invitation to visit the electrical and X ray departments of the various hospitals in Liverpool.

The opening address was given by Professor E. RUTHERFORD (Manchester) on

The Chemical Action of the Radiation of Radium.

He said that the chemical effects due to the alpha rays of radium were far more marked than those due to the beta and gamma rays. Using large quantities of radium, marked chemical effects were produced by the alpha rays in the course of a few hours or days. These were best shown by adding radium emanation to a solution when the alpha rays had full play, or by using a very thin-walled glass tube into which purified emanation was compressed. He showed such a tube containing the emanation from about 50 milligrammes of radium, and demonstrated that the alpha rays readily passed through with very little absorption. The chemical effects of the beta and gamma rays had not been studied in the same detail as for the alpha rays, but there was no definite evidence that the chemical changes produced by the beta and gamma rays would not be equally and far more rapidly brought about by the alpha rays. As far as observation went, the beta and gamma rays were able to dissociate complex molecules in much the same manner as the alpha rays, but the effects for a given quantity of radium were on a much smaller scale than for the alpha rays on account of the much greater relative energy of the former. The evidence so far available indicated that the radiations exerted a strong dissociating action on complex molecules and broke them down into simpler forms. There was also under suitable conditions a reverse action. Coming to the therapeutic effects of these radiations, he expressed the view that these must be a result of the chemical changes brought about in the material which the radiations traversed. The chemical effects produced by the α, β, and γ rays, so far as they had been studied, appeared to be very similar. Such a result was only to be expected from the similarity and character of the ionisation produced. It would consequently be expected that each of these three types of radiation should produce similar therapeutic effects when account was taken of the ionisation produced in a given direction. In comparing the therapeutic effects of the three radiations, account had also to be taken of the wide difference in their relative chemical action at any given point. When these factors were allowed for numerous investigations indicated that the bactericidal effect of the α rays was similar to that produced by the β rays. He thought that the use of the alpha rays might be extended, as it was a simple matter to utilise them through a considerable volume—for instance, by the injection of water charged with emanation. Solutions of thorium χ and other active products would, no doubt, be equally serviceable. It was undesirable, however, to introduce unprotected the actual radium or thorium salts in the system. Apart from the poisonous action, at any rate of the latter, these might remain permanently in the system and ultimately destroy the tissues surrounding them. For this reason the use of solutions of the radium emanation and of thorium χ had very great advantages for the purposes of experiment.

Mr. ERNEST H. SHAW (London) read a paper on

The Action of Radium and X Rays in Malignant Growths,

which was largely concerned with a description of the histological changes discovered in malignant disease undergoing treatment by X rays and radium. These changes included round-celled inflammatory infiltration, formation of fibrous tissue in varying amount and density, and necrosis of tumour cells. Were these changes to be attributed to the action of X rays and radium? All these changes were seen repeatedly in tumours that had not been exposed to the action of X rays and radium. His interpretation of such changes was that they were due to reactive inflammatory processes on the part of the body tissues in their attempt to check and ultimately overcome the cells of the tumour. The fibrous changes were very commonly seen in breast carcinoma, especially in the variety described as scirrhus. With these and other facts before them they must not say that the changes seen in tumours after treatment by X rays and radium were due to those rays alone. They were not specific changes. Malignant tumours undoubtedly diminished in size under the action of X rays and radium, but so they did without this treatment, in a small number of cases certainly, but they did. But the proportion of tumours which diminished under treatment was much greater than that which did not. He expressed the view that Nature, in her attempts to check and destroy the invading cells of a malignant growth, brought all her inflammatory forces into line. X rays and radium acted by destroying a certain number of malignant cells outright, but they acted mainly as a stimulant to the healthy cells of the body to urge them on to still greater inflammatory activity.

Dr. N. S. FINZI (London) read a paper on

The Forms of Malignant Disease Benefited by Radium Treatment.

He pointed out that working with the radiations filtered through metal there were three ways of using them: (1) to prevent recurrence after operation; (2) to attempt to obtain a cure; and (3) to relieve symptoms and prolong life. He expressed the opinion that they should be used after every case of operation for malignant disease to prevent recurrence, the tubes being left in the wound at the time of the operation, especially in the types of growth which were most favourably influenced by the treatment. The attempt to obtain a cure if it failed often led to considerable relief being established, but if no attempt were made to obtain a cure and relief only were looked for, somewhat different methods of treatment were employed. The principle of the treatment was based on the fact that the cells of a growth are more easily destroyed by the radium rays than the healthy cells. Stress was laid on the fact that the result of the treatment was partly due to vital reaction of the healthy tissues, and this, in the later stages of the disease, was missing. The forms of growth most benefited were round-celled sarcoma, rapidly growing glandular carcinoma, endothelioma, and slowly growing epithelioma. He advised that in extremely malignant forms of growth where the surgeon's results were very bad consideration should be given to the question of treating these by radium as possibly allowing greater hope of a successful result. In all other cases only inoperable growths were treated with radium. For recurrent carcinoma of the breast he often preferred X rays on account of deep growths in the mediastinum. He expressed the following conclusions: (1) That radium should be used in every operation for malignant disease as a prophylactic; (2) that an attempt to obtain a cure should be made in inoperable cases, especially of rapidly growing sarcomata and carcinomata and slowly growing epitheliomata, as even if a cure is not obtained marked relief is given; (3) that rapidly growing epithelioma, except in the earliest stages, should be left severely alone; (4) that in rapidly growing neoplasms which are still operable consideration should be given to the usual surgical results, and if these are bad that radium should be tried when the type of growth is one readily influenced by the rays; and (5) that the most easily influenced growths are the round-celled sarcoma, rapidly growing glandular carcinoma and endothelioma, and slowly growing epithelioma.

In the subsequent discussion there was a very full agreement with the ideas expressed by the readers of the papers. Those who took part were: Dr. ROBERT KNOX (London), Dr. C. F. BAILEY (Brighton), Dr. FRANK FOWLER (Bournemouth), Mr. J. HALL-EDWARDS (Birmingham), and Dr. F. HERNAMAN-JOHNSON (Bishop Auckland).

Mr. SHAW and Dr. FINZI replied.

Mr. W. ARMSTRONG (Buxton) read a paper on

The Therapy of the Radio-oxygen Bath,

mentioning its extensive and successful use in Germany and the United States of America. He showed how artificial oxygen driven into the water had failed to give satisfactory results, and pointed out how the preparations of Sarason, Morganstern, and Wright, generating oxygen in the bath from perborate of soda and manganese, had placed the therapy on a sound basis. He gave the composition, temperature, and duration of the baths; quoted the investigations of some 30 German and American scientists and physicians and his own observations to prove that this treatment was valuable in (1) cardio-neuroses with tachycardia and arrhythmia, especially of the post-influenzal type; (2) organic heart troubles with hypertension; (3) arterio-

sclerosis (except in the latest stages); (4) angina pectoris (during intervals between attacks); (5) Bright's disease; (6) arthritis, gout, rheumatism, neuralgia, neuritis, polyneuritis; (6a) neurasthenia, hysteria, functional neuroses; (7) the nervous affections of the menopause; (8) various dermatoses, urticaria, pruritus; (9) Basedow's disease; and gave the following summary of his investigations. 1. The oxygen bath has been proved by many distinguished observers to possess a marked influence in the treatment of disease. 2. By its tonic action on the heart and the simultaneous reduction of blood pressure its use is strongly indicated in those cardiac and kidney cases where hypertension is present. 3. Through its remarkably soothing action on the nervous system, and especially its definite effect in producing calm natural sleep, it is a treatment of great value in the important group of functional neuroses, especially those of the climacteric. 4. By its blanching and sedative action on the skin it is of considerable service in many hyperæmic and irritable skin affections, especially the various dermatoses. 5. The radio-oxygen bath, by reason of the effects of radium emanation in greatly increasing the output of body toxins through the lungs, skin, and kidneys, possesses much greater efficacy in gout, arthritis, and neuritis than the oxygen bath alone. 6. As the addition of nascent oxygen to radio-active water much increases its efficacy the various natural radio-active waters, such as those of Buxton, Bath, Wildbad, and Gastein, can by this simple addition much enhance their value in dealing with many troublesome ailments. 7. This combination is of exceptional value in cases of gout and allied diseases in which there is increased blood pressure—takes away the risk of giving mineral baths to such cases, and makes an ideal bath for elderly and delicate patients. 8. The "Nauheim" effervescing saline baths show greatly improved results when hypertension is present from the substitution of the radio-oxygen for CO_2. 9. The Schwalbach or effervescing iron baths so efficacious in utero-ovarian troubles are more effective with oxygen than CO_2 on account of the soothing and tonic effect of the former—a matter of great importance in cases where the sympathetic nervous system is so often hypersensitive and disordered. 10. The substitution of oxygen for CO_2 avoids the tendency of the latter to produce dyspnœa, vertigo, precordial anxiety, and palpitation, due to inhalation of carbon dioxide. 11. The inhalation of the radio-oxygen emanation from the surface of the bath is especially helpful in asthma and other respiratory troubles; and generally in all diseases amenable to radio-oxygen therapy.

Dr. FINZI, Dr. G. E. BOWKER (Bath), Professor RUTHERFORD, and Dr. HERNAMAN-JOHNSON discussed the paper.

Mr. E. H. HOWLETT (Hull) read a short paper on

The Standardisation of Radium Dosage.

He said that numerous cases treated by radium have been reported, but it was impossible to form any conclusion as to the dosage to be employed in a given case, as the investigators have worked with various strengths of applicators and for varying times. In Hull a supply of radium had been purchased by public subscription and placed in the hands of the corporation who are prepared to lend it to any practitioner free in the case of the poor, and for a small fee to those able to pay. Difficulty at first was found in employing this radium as the various applicators differed in size and strength. This was overcome by adopting a working standard of 1 c.g. or 10 mg. of solid radium, 500,000 activity acting for one hour. It is now sufficient to order so many standards in a given case, and the house surgeon could employ any of the applicators at his disposal. It was suggested that a small committee be formed to work out a standard which would be capable of ready employment.

Mr. C. B. DEANE BUTCHER (London), and Dr. FINZI criticised this paper, both being of the opinion that the terms of any standard should be based on the amount of pure metallic radium contained in it.

ANÆSTHETICS.

WEDNESDAY, JULY 24TH.

President, Dr. DUDLEY W. BUXTON (London).

In opening the proceedings the PRESIDENT, after welcoming the visitors and members, passed in brief review the evolution of anæsthesia from empiricism to science, and dwelt on the difficulties with which anæsthetists had to contend in the prosecution of research. Much had fortunately been done by physiologists, surgeons, and physicists, and the British Medical Association had been conspicuous in the encouragement it had extended to those who sought to unravel the secrets of anæsthesia. There was still, however, much to be done. The advantages of the anæsthetist having facilities for studying his patient before operation was one of the items for discussion; such facilities were desirable in the interests of all parties and of progress in the specialty. Other matters for discussion were concerned with recently adopted methods. Whilst welcoming every addition to the anæsthetist's armamentarium, he deprecated over-enthusiasm. At these meetings the claims advanced for new methods were subjected to impartial criticism, and therein lay their value. In his experience each new method sooner or later showed itself to possess some merits and to involve some drawbacks; it was therefore of the greatest importance that before deciding on the method to be adopted in an individual case the anæsthetist should have an opportunity of studying the patient and a knowledge of the operation contemplated. Technical skill might be acquired by anyone with patience and opportunity, but the anæsthetist should have in addition a scientific knowledge of the action of various drugs and methods. This country was at an advantage in having a body of experts in this specialty. More should, however, be done for their encouragement. Compared with other branches of medicine and surgery the practice of anæsthetics was at a disadvantage in status, emoluments, and opportunities for scientific work, and offered little inducement to the ablest students to enter its ranks. Happily, to-day the more enlightened members of the profession were recognising the value of the scientific anæsthetist and putting him on an equality with others who were masters of their craft.

Dr. FELIX S. ROOD (London) then opened a discussion on

Intravenous Infusion Anæsthesia.

He spoke first of post-anæsthetic acidosis, more common after chloroform, and leading to the more frequent use of ether, especially since the introduction of the open method and of the preliminary injection of narcotic alkaloids. He considered the results thus obtained superior to those obtained by chloroform, even in regard to post-anæsthetic gastric and pulmonary complications, and quoted figures from foreign clinics in support of his view. There were, however, some drawbacks inherent in all inhalation methods which he enumerated. Provided the direct introduction of the anæsthestic into the blood could be safely brought about, that method disposed of these difficulties. He quoted Burghardt's experience and described the method originally adopted on the continent, that of an interrupted flow, and pointed out its disadvantages. To obviate them he had devised his apparatus, which allowed of a continuous flow (the rate of which could be regulated to a nicety), provided for the warming of the solution, and permitted of sterilisation by boiling. Before inducing anæsthesia he recommended the injection of atropine always, and in most cases advised the addition of scopolamine and morphine. He considered that in most cases it was advisable to dissect out a vein and tie in a cannula, but in some cases venipuncture could be easily performed. He preferred to use the veins at the bend of the elbow. The time of induction was generally two to three minutes, after which the flow should be cut down to such a rate as kept the patient at the proper anæsthetic level. Where no previous narcotic injection had been made recovery of consciousness after operation was extremely rapid, almost as rapid as after nitrous oxide. The method was a safe one provided strict aseptic precautions were taken; anæsthesia was characterised by flexibility and muscular relaxation; he personally had never had cause for anxiety. After giving a record of 297 cases collected from the records of University College Hospital he summed up the advantages of the method as follows: Absence of deleterious after-effects, prevention of shock by the infusion of saline, absence of pulmonary irritation, and the separation of the spheres of activity of surgeon and anæsthetist in many operations.

Dr. W. J. MCCARDIE (Birmingham) thought that respiratory difficulties in operations on the upper air passages were easily combated by the use of Crile's tubes; in his experience they seldom arose. For operations on the larynx itself or on large goitres, and in cases where shock or hæmorrhage had already occurred or was to be anticipated, he considered intravenous infusion offered distinct advantages.

Dr. VICTOR G. L. FIELDEN (Belfast) regretted that Dr. Rood had not been able to demonstrate his method of intravenous infusion or to show the apparatus. His experience had been practically nil, and the objection he had found to the apparatus as published in Dr. Rood's original paper was that the warm ether-saline solution in the chamber admits of the evaporation of such a great amount of the ether that apparently a very weak solution of ether reaches the blood with little chance of causing somnolence, much less anæsthesia. Dr. Fielden suggested that an arrangement would be better in which the warming of the solution was carried on in the chamber between the pipette and the cannula. He also asked Dr. Rood if he had seen œdema of the lung as a sequel. The incidence of lung complications after chloroform quoted by Dr. Rood seemed to Dr. Fielden to be very high.

Mr. ALEXANDER WILSON (Manchester) pointed out the disadvantages that might occur in the way of respiratory embarrassment if the surgeon had sole and uncontrolled access to the upper air-passages.

Dr. G. A. H. BARTON (London) said his experience had not been entirely satisfactory, and in consequence was somewhat limited. He had infused intravenously on 13 occasions with ether and on 10 with hedonal. The great drawback to ether was the impossibility of infusing the solution at blood heat; the anæsthesia obtained with ether was quite satisfactory, but no better than that obtained by inhalation methods; the after-effects were worse than those usually obtained in his practice. Vomiting was frequent; two cases had hæmaturia, one of them being definitely a case of acute nephritis with suppression of urine. One case was followed by a low form of pneumonia, which, however, was not considered to be due to the anæsthetic. Hedonal as a rule gave an ideal anæsthesia, but was dangerous. It had a markedly depressing effect upon the respiratory centre, and the prolonged period of unconsciousness after operation was a source of danger. One of his patients had died two hours after operation from the quiet inhalation of blood into lungs already *hors de combat* from an acute miliary tuberculosis entirely unsuspected before the autopsy revealed it. Hedonal should not be given to the weakly, nor to those with any disease of the respiratory system; nor should it be used in any cutting operation involving the air passages. In selected cases both ether and hedonal had their value, but until a drug was found having the safety of ether with the freedom from after-effects and other advantages of hedonal he did not think inhalation anæsthesia was likely to be displaced by the intravenous method.

The PRESIDENT said that in his experience the method was valuable. Like all new methods, a complete mastery of the technique was necessary before exploiting it, and a careful selection of cases should be made. Undoubtedly there were some special dangers inherent to the method, but these could be easily avoided by the anæsthetist devoting his whole attention to the administration; the method no doubt required closer attention than others. He thought it best to dissect out the vein and tie in the cannula; this was safer and more certain if less spectacular than venipuncture. He considered the statistics quoted of post-operative complications after chloroform anæsthesia were vitiated by the absence of any statement as to the method of administration adopted. Such complications were usually the result of chloroform toxæmia which could be abrogated by the employment of minimum doses given from a regulating inhaler.

Dr. ROOD briefly replied.

Mr. ALEXANDER WILSON then opened a discussion on the

Importance of affording the Anæsthetist an Opportunity of making a Thorough Examination of the Patient some Days Previously to Operation and After the Nature of the Operation had been disclosed.

He said it would be readily admitted that the advances of modern surgery had made the task of the anæsthetist more difficult and had increased his responsibilities. Not only so, but his opportunities for observation and his freedom of action during his labours were now curtailed. He was fortunate if he were allowed free access to the patient's head; too often this was more or less hidden by sterile towels, and the anæsthetist kept at arm's length from his patient. Also there was an increasing tendency to saddle the anæsthetic and its administrator with the responsibility for sundry after-effects. In addition new anæsthetic agents and new methods were being evolved. Under these circumstances, it was only by careful examination of the patient beforehand and with full foreknowledge of the operation contemplated that the anæsthetist could produce the best results in individual cases, each of which required careful consideration from many points of view.

Dr. S. W. HAYNES (Birmingham) sent a communication regretting his inability to be present, and strongly supporting the proposition before the section.

Mr. L. KIRKBY THOMAS (Birmingham) entirely agreed as to the advisability of the anæsthetist examining a patient previously to operation, but doubted its practical possibility at the present time, partly owing to the attitude of the professional public and partly to apathy on the side of the anæsthetist. So long as the anæsthetist remained content to give anæsthetics in cases of which he knew practically nothing till he arrived at the operating table, so long would there be, even in the most skilled hands, a certain percentage, not only of preventable fatalities immediate or remote, but also of cases in which a better anæsthesia might have been obtained for the operation in hand. Mr. Thomas suggested that the remedy lay largely in the hands of the anæsthetists, and trusted that the discussion would justify itself before the profession at large.

Mr. C. CARTER BRAINE (London) agreed with all the points mentioned by Mr. Kirkby Thomas. In a quarter of a century's experience he had only been asked to make a careful preliminary examination on two or three occasions, though other individuals had at times been called in even to advise as to the anæsthetic most suitable to be given. He deprecated the administration of drugs to the patient by surgeon or practitioner previously to operation without disclosing the same to the anæsthetist or asking his advice, merely leaving him to suspect the practice from the course of the anæsthesia. He had found in some cases an excessive amount of morphia had been injected previously to anæsthesia.

Mr. W. FINGLAND (Liverpool) spoke against the preliminary administration of narcotic drugs.

Mr. C. A. LEEDHAM-GREEN (Birmingham) pointed out the difficulty of educating the public to the necessity of a preliminary consultation with the anæsthetist with its contingent fee. The surgeon was justified in giving any drugs he thought fit to his own patients even previous to anæsthetisation.

Dr. W. DAKIN MART (Sheffield) agreed with what had been said about the importance of previous examination of the patient particularly with a view to gaining his confidence and removing nervousness.

Dr. MCCARDIE quoted Crile's view that amongst other things emotional excitation was active in discharging the stored-up energy of the body. He considered that neither surgeon nor anæsthetist attached sufficient importance to this fact; it was necessary that everything should be done to remove this emotional strain both by reassuring the patient and by the administration of suitable sedative drugs. Crile held that those in contact with the patient previously to operation should be humanitarians and psychologists, and for this reason considered women anæsthetists preferable to men.

The PRESIDENT was strongly convinced of the advantage of the anæsthetist previously gaining the confidence of the patient. No financial considerations should be allowed to militate against this; it was the function of the anæsthetist to hold the balance of life and death, and the responsibility deserved just payment. Whilst holding strong views on the subject, he quite recognised that anæsthesia was, of course, always only ancillary to surgery. He emphasised the advantages that accrued to the patient, the surgeon, and the anæsthetist from the possession by the latter of complete foreknowledge of all details.

MEDICAL SOCIOLOGY.

WEDNESDAY, JULY 24TH.

President, Dr. J. C. MCVAIL (Glasgow).

Though the attendance in the section of Medical Sociology at its opening session was meagre, because the continuance of the Representative Meeting kept away so many of those especially interested in the proceedings of the section, yet the discussions maintained a high level of interest throughout.

The PRESIDENT said that although the section was one

of the youngest in the Association, having regard to the way the relations of the medical profession with the public had extended in recent years, it would doubtless become one of the most important. However long it continued, it could never have under discussion questions of more far-reaching importance than those that now occupied its attention.

Dr. R. R. RENTOUL (Liverpool) read a paper on

A Public Medical Service under Professional Control.

He felt that the National Insurance scheme would give better results if the employment of all doctors was made a branch of the Civil Service. Nationalisation of medicine was not so far off as some thought, and he enumerated the various capacities—the army, navy, and Indian army, medical officers of health, Poor-law medical officers, public vaccinators, prison surgeons, asylum doctors, ships' surgeons, colonial surgeons, factory surgeons, Post Office medical officers, medical inspectors of schools, and so on—in which medical men were engaged by the State or municipality. He suggested that a public medical service under the Insurance Act should be remunerated on the following lines. The Insurance Committees should pay 6*s.* per insured person due to the doctors. This might be increased to 7*s.* in the case of the Post Office contributor. A further sum of 2*s.* 6*d.* should be paid by the Insurance Committees to the doctor or chemist in respect of medicines; this he considered a small amount compared with the German allowance of 3*s.* 8½*d.* to the chemist. There should be extra fees to the doctor for night, Sunday, and holiday work, and for operations. Each insured person should pay to the doctor in addition a yearly sum of 5*s.*, or 1*d.* a week. These three items for 14,000,000 insured persons he calculated would give doctors an annual income of £9,450,000, or £472 gross each, exclusive of confinements, vaccinations, operations, sanatoria, &c., these probably bringing in from £50 to £100 each doctor yearly. In combating any suggestion that the working classes could not pay 1*d.* a week towards medical attendance, Dr. Rentoul gave a list of items on which, in his opinion, national expenditure might be reduced. The utmost limit of medical charity had now been reached; he estimated that doctors gave as charity in the shape of medical work £8,678,000 per annum. To meet fees for extra work by the profession, he would make each person earning under £160 a year subscribe to a mutual health fund; this should take the place of contributions to the Hospital Saturday Fund. He claimed that a public medical service on these lines would lessen the abuse of voluntary hospitals; provide an efficient medical service for the insured class; diminish the sick-rate, invalidity-rate, loss of wages rate, and death-rate; lessen the number of quacks, and save doctors many bad debts and the trouble connected therewith.

Dr. FERDINAND REES (Wigan), in a paper on the same subject, urged that as modern education was tending to equalise the condition of mind of all classes, so that the problems of the future would be community problems, the medical profession should be regarded as a national service, concerned with the care of the health of the community. He regretted to see a tendency on the part of the medical profession to adopt the Syndicalist theory—that members of an industry should entirely control that industry, primarily in their own interests. Up to the present there had not been any fixed medical charges; these had been governed by the principle of extracting as much as possible from patients in accordance with their ability to pay. Was a public medical service to be organised on the lines of extracting as much as possible from the working classes, for that was what the provision of a medical service under professional control really meant. That was not a course likely to ingratiate the profession with the rest of the community. The working classes were unable to pay ordinary medical charges because of the inadequacy of their wages. Surely it was fairer and less derogatory to the profession for the State to tax the wealthier members of the community in order to remunerate the profession. That could only be done by the State organising the medical profession into a national medical service and paying it adequately. This would place the profession in a more dignified position than a service under professional control run for the purpose of extracting as much remuneration as possible from inadequately paid working men. It did not seem likely, moreover, that working men, after their experience in controlling Friendly Society sick clubs, would become members of a medical service completely under the control of the profession. Without inflicting hardship on certain members of the community, it was impossible for the profession to obtain adequate remuneration unless all members of the community contributed in proportion to their means to provide a fund from which the profession would be paid. The suggested payments to a professional medical service would bear most hardly on those insured persons least able to pay, while if payments were arranged so that all above the Poor-law line could afford to become members without hardship the scale of fees would be so low as not adequately to remunerate the profession. Doctors should not set up a system which must make many of those receiving treatment feel that they were objects of charity. It was time the profession ceased to be a competitive trade, with its selling of medical goods, its ledgers, its weekly collectors, and its county court agents. Now it had come to such a pass that the Representative Meeting had been seriously considering the advisability of converting the Association into a registered trades union. It would be better to become a purely scientific profession, with perfect equipment, however expensive, to enable it to do the best possible work. This, however, could never be brought about except by a State medical service.

Mr. H. A. BALLANCE (Norwich) contributed

Some Notes on a Public Medical Service Scheme Established in Norwich in 1902.

Arising out of a charge before the General Medical Council of canvassing for patients, the medical men in Norwich who were doing work for the National Medical Aid Company decided to resign if the local profession could devise another means by which they could see their patients. As a result the Norwich Medical Service was started, and the patients of these men were transferred to it. In 1907, five years after starting, the number of subscribers was 4700 and the takings £20 a week; in 1911 the membership was 7500 and the takings £30 a week, the number of collectors having been increased from one to two. The collectors were paid a fixed salary, so that they had no inducement to canvass for patients. All subscribers paid 1*d.* a week or 1*s.* a quarter. The charge was the same in respect of children, except that all children in one family after the fourth were treated free. The service had tended, on the whole, to raise rates in Norwich, and if contributory contract work were put on a similar footing there was no doubt that the conditions under which such work would be done would be far more satisfactory than at present.

Dr. R. W. W. HENRY (Leicester) read a paper, in which he discussed the principles upon which

The Public Medical Service Recently Established in Leicestershire and Rutlandshire

had been founded. He remarked that 181 out of 184 men engaged in the past in contract practice had staked their fortunes on the success of the scheme. Relating the history of the proposal, Dr. Henry said it was felt that if it became necessary to call upon those holding contract practices to resign them work must be provided which would give them a reasonable chance of earning a living, and, moreover, having expressed the opinion that 6*s.* per head was under-payment, it was felt that the profession would be stultifying itself in the eyes of the public if it continued to treat patients at 4*s.* per head and under. The principles upon which the profession proceeded were that the coöperation of practically the whole of the profession must be secured, and that the scheme must provide for both the insured and the uninsured class. The "six points" of the British Medical Association were all included. The whole profession in the locality was canvassed and a large measure of support was promised. The crucial point was whether those who approved the idea would take action; it was essential to success that every contributory club appointment should be resigned. All except three signed resignations of appointments totalling 800. A press committee was formed, and its efforts created a most favourable impression amongst the laity. A striking result of the new system was the spirit of friendship that had grown up locally amongst the profession. A difficulty as to possible competition from medical men just outside the county boundary had been satisfactorily dealt with and private clubs had been put on the same rates of payment as for the new service, the stipulation being made that no new members should be enrolled. Owing to the wide range of

wages paid in the area a varying scale of contributions had been fixed and the organisation throughout the county was carried on by subcommittees. The contribution scale was as follows:—

For insured persons, not less than 2d. a week.
For uninsured persons over 16 ... 1½d. ,,
Children ... ... 1d. ,,
(Not more than four children to be charged for.)
After the first year an entrance fee and card fees would raise the rate to over 9s. per annum.

In thinly scattered districts it was regarded as impracticable to employ a collector otherwise than on commission, but having regard to the fact that they were servants of an organisation and not of an individual, the main objection to employment on commission was removed.

In the course of a general discussion, Dr. R. J. IRVING (Southport) expressed the view that the medical man, sooner or later, must become the servant of the State. When that came about it would be possible to organise the profession more thoroughly so that men of great experience should not have to spend their time on minor ailments, leaving these to younger men. The man who had just qualified needed supervision.

Dr. A. G. GULLAN (Liverpool) thought it unwise to spend much time over Utopian views of the future of the profession. The ideas of the State with regard to the remuneration and conditions of the medical profession were shown by recent events to be not at all Utopian.

Professor B. MOORE (Liverpool) thought the right course had certainly been taken in Leicestershire. One of the most likely things for the Chancellor to do was to do nothing at all, so that medical benefit would be handed over to the approved societies. Medical services organised by the profession would then be very necessary; they should be as nearly as possible alike, because if the rates differed widely difficulties would arise. These medical services would enable the general practitioner to take up more vigorously the preventive side of medicine.

Dr. J. H. TAYLOR (Salford) raised the question of the amount of professional control that would be possible in public medical services. The public which found the money would demand a voice in the control; that was a point the British Medical Association's scheme overlooked. He considered that a great deal too much money was spent on administrative expenses in all services of this kind hitherto established by the profession.

Dr. R. HARRIS (Southport) discussed the difficulty of fixing a wage limit that would be fair to all.

Dr. M. DEWAR (Edinburgh) read a paper on

Reform of Out-patients' Departments of Hospitals.

He gave a number of glaring examples of hospital abuse, and dealing with remedies, mentioned the establishment in Edinburgh of nursing homes at moderate fees for the reception of middle-class patients. Dr. Dewar made the following definite suggestions for reform: 1. A notice in all hospitals on these lines: "This voluntary hospital is for those who are unable to pay for medical and surgical treatment." 2. The appointment of an official to supervise the applicants for advice or treatment. 3. Evidence of suitability, except in emergency cases, to be obtained. 4. Urgent cases found to be ineligible should be referred elsewhere as soon as possible. This should also apply to trivial cases. 5. On first visit all patients should be seen by a medical practitioner. 6. Out-patient departments should be reserved for consultative purposes, and the cases should be referred to the general practitioner with a statement of opinion. 7. There should be coöperation between hospitals. 8. All cases, as far as possible, should be seen by the almoner.

Mr. W. GRISEWOOD, secretary of the Liverpool Charity Organisation Society, also contributed a paper on this subject, in which he gave facts with regard to hospital abuse drawn from Liverpool.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 24TH.

President: Dr. LANDEL ROSE OSWALD (Glasgow).

Dr. PERCY SMITH (London) opened the proceedings of the section by introducing a discussion on

The Neuroses and Psychoses of the Climacteric: their Prognosis and Treatment.

Dr. Smith, who dealt with the subject from the standpoint of psychiatry, based his paper on figures derived both from hospital and from private practice. In the case of the former, of 1871 female cases admitted under Dr. Smith's care to Bethlem Royal Hospital during the years 1885–1895 inclusive, 118 cases, or 6·3 per cent., were classified as associated with the climacteric; in the case of the latter, his figures comprised 101 cases seen in private consulting practice. According to the tables of the Commissioners in Lunacy, of all admissions to asylums during the years 1907–08–09, 11·2 of the private cases and 7·8 of the pauper cases were associated with the climacteric. The proportion of senile cases among the private patients during the same years was only 6 per cent. Whether any factor is operative in the class from which private patients are drawn which does not apply to the pauper class is matter for discussion. It is possible that persons who have more leisure and less to occupy their time with may be more prone to develop delusional or depressive forms of insanity. Of the 101 cases from private practice, 34·5 per cent. were in single women, but when the proportion of married to single women, at the average climacteric period, is borne in mind, it appears that single women are really more prone to develop psychoses or neuroses at that time than married women. In these 101 cases a hereditary factor could be traced in 58 per cent. Out of both asylum and private cases combined, Dr. Smith found that in about 40 per cent. there was a history of previous attacks of insanity in one form or another. The question arose whether there was a special form of insanity associated with the climacteric. According to Kraepelin, many so-called climacteric cases should be classed as belonging to the manic-depressive group. In Dr. Smith's experience the commonest type of insanity occurring at this period was melancholia. No fewer than 82 per cent. of the Bethlem cases quoted above belonged to that group in one or other of its varieties. Maniacal states were far less frequent as first attack cases, although they were more common in subsequent attack cases. Out of the series of 101 private cases, 16 were described as cases of chronic delusional insanity. Among these many patients showed delusions associated with the sexual life. Only a very small proportion of the group of climacteric insanity was constituted by cases of primary dementia. According to Sir Felix Semon, sensory neuroses of the larynx, such as a feeling that food stops in the throat, choking, constriction, and so forth, were much more common at the menopause than at any other age-period. When neuroses developed at the climacteric, according to Dr. Smith, they were frequently associated with obsessions that were more less or definitely sexual in character. The prognosis depended on the nature of the case. In the series of Bethlem cases 42·3 per cent. recovered. Of the 101 private cases 26·4 per cent. of the first attack cases recovered and 33 per cent. of the subsequent attack cases. Probably not fewer than one-third of the melancholic cases become chronic. Treatment must be conducted along the usual lines of the treatment of psychoses in general. Dr. Smith had not seen any good result either from treatment by ovarian extract or by transplantation of ovaries.

Dr. C. J. MACALISTER (Liverpool) dealt with the subject from the standpoint of general medicine. In many functions of the animal organism, he said, rhythm or periodicity was a striking phenomenon; sleeping, waking, menstruation, and ovulation were distinctly cyclical, while there were the wider cycles of birth, infancy, childhood, puberty, adolescence, maturity, the climacteric, and senescence. Thus in the facts of life there were literally wheels within wheels. Dr. Macalister then proceeded to deal with the occurrence of nervous disorders as the result of, and secondary to, disease in some neighbouring structure, and illustrated his meaning by reference to the giddiness and vomiting produced by diplopia from ocular palsy; it was not necessary, he said, to have actual disease in the structures thus functionally disturbed. Trousseau called the phenomenon "cerebral surprise." An individual walking on the edge of a precipice might suffer acutely from giddiness, faintness, and so on, the expression of cerebral surprise occasioned by the conflict between the sensations coming from the feet (which were planted firmly on the ground) and those reaching the sensorium by the visual apparatus, according to which there appeared to be nothing under the feet. The speaker then applied these illustrations to the subject under discussion, and maintained that at the climacteric nervous disorders without structural disease might occur as the result of faulty stimulation from the glands of internal

secretion. This was true of puberty also. Incoördination of the glands of internal secretion was accountable for many psychoses and neuroses, and in support of this view two interesting clinical cases were quoted, one being that of a young woman with attacks of melancholia and delusions of fear, symptoms which were always aggravated at the menstrual periods: in this patient hypertrichosis and certain secondary male sexual characteristics pointed to hyperplasia of the adrenal cortex. On the part of males similar mental changes might occur as the result of disturbance in glandular balance.

Dr. T. B. GRIMSDALE (Liverpool), discussing the subject from the standpoint of gynæcology, said that in his experience as a gynæcologist the production of an artificial or acute menopause (by operation during full sexual activity in the patient) was frequently associated with the development of flushing, palpitation, tremulousness, and hyperidrosis, and he quoted a case in which these symptoms had occurred daily, in a peculiarly aggravated form, for a period of seven years after a double ovariotomy. Such cases, he thought, might often be relieved by the administration of ovarian extract or by transplantation of ovarian substance. He quoted a case, recorded elsewhere, where the transplantation of the ovary from a 17-year-old girl into an ovariotomised woman of 29 had been followed by the occurrence of erotic dreams on the sixth day and later by a menstrual flow. Dr. Grimsdale thought there was a definite functional association between the ovaries and the thyroid, and quoted a personal case where double ovariotomy, in a case of advanced exophthalmic goitre, had been followed by complete disappearance of the symptoms of the latter disease.

The PRESIDENT said that in his experience the psychoses and neuroses associated with puberty were on the increase, but not those associated with the climacteric. Of 72 private cases of so-called climacteric insanity, 26 had had a previous mental illness. He had examined the suprarenal glands of 70 cases of psychosis in one or other variety, and in three cases in which the symptoms were concerned with the sexual sphere the adrenal cortex was hyperplasic. He had noted this same change in a case of nymphomania. Out of 500 admissions to the Glasgow Royal Asylum, in 7½ per cent. association with the climacteric as a possible etiological factor was noted; of 250 private cases, in only 10 was this connexion found. On the other hand, in dispensary work the President had been struck by the frequency of mild neuroses and psychoses at the climacteric; in over 18 per cent. of dispensary cases sent him for mental symptoms this period of life was noted as constituting the important element in the case. He found the proportion of single to married women was 5 to 3. He could not say that any one psychosis or form of insanity was peculiar to the climacteric; depression, phobias, ideas of culpability, &c., were the commonest forms. He thought the prognosis was favourable in many instances, but had not found any particular treatment of special value.

Dr. W. MAULE SMITH (Worcester County Asylum) described a series of cases occurring between the ages of 40 and 50, where the symptoms of insanity appeared to follow directly on the climacteric. He admitted the association of melancholia in various forms with disturbances of menstruation, but found no relationship in maniacal cases or in delusional cases.

Dr. T. D. GREENLEES (London) asked if operative treatment was of any use in the treatment of insanity associated with the climacteric.

Dr. W. ALEXANDER (Liverpool) said he had never seen insanity occurring after double ovariotomy except in cases where there was a definite neuropathic diathesis. As a rule he refused to operate in the latter type of case, because not infrequently discredit was thus brought on the operation.

Dr. DAVID BLAIR (Lancaster) quoted an interesting case occurring in a woman, aged 45, suffering from delusional insanity, who imagined she was pregnant, and used to roll on the floor in the throes of childbirth. At the subsequent post-mortem examination in this case one suprarenal was hypertrophied and the other degenerated. The uterus and ovaries were normal.

Dr. HENRY DEVINE (Wakefield) said he could not agree with the views of Dreyfus, who had stated that insanity associated with the climacteric was only a phase of the large group of manic-depressive insanity. He thought, on the contrary, that the psychoses of the climacteric constituted a very distinct type, and formed excellent material for a biological study of that epoch.

Dr. PURVES STEWART (London) desired to speak of the neuroses and psychoses of the climacteric from the point of view of the neurologist—i.e., from a point intermediate between that of the alienist and that of the gynæcologist. Restricting his remarks to the nervous affections commencing at the climacteric, and carefully excluding those not uncommon cases in which the menopause merely produced an exacerbation or fresh attack of a previously existing nervous or mental malady, Dr. Stewart found that cases of climacteric neurosis and psychosis were nevertheless very numerous, probably more numerous than Dr. Percy Smith's statistics showed. But the vast majority were of the mild or minor type, a class of case that was more likely to come to the physician or to the general practitioner than to enter the august portals of the alienist. Several groups of minor climacteric neuroses might be mentioned. Of these, the commonest were associated with the cardio-vascular system—e.g., paroxysmal tachycardia, sudden sensations of flushing or of coldness in the head, trunk, or limbs, which might or might not be associated with visible redness or pallor of the skin. One particular form of paroxysmal cutaneous erythema was specially common at the climacteric. It consisted in a patch of redness of the neck, shoulders, and upper part of the chest, limited above by a line corresponding to the area innervated by the trigeminal nerve, the upper boundary of the erythema thus including the angles of the jaws and running along towards the chin just above the lower border of the mandible. Paroxysmal sweating was also common. Attacks of vertigo with or without tinnitus, but, as a rule, unaccompanied by deafness, were probably due to transient changes in the circulation of the labyrinth. Variations of cerebral circulation possibly accounted for the headaches and other forms of cephalic discomfort, and possibly also for part, at least, of the mental lethargy, the emotional instability, and the irritability of temper of which the climacteric woman (and her non-climacteric friends and family) complained so bitterly. Phobias and obsessions of various sorts were also particularly common in climacteric women. Dr. Stewart had made a considerable number of observations on the blood pressure in patients at the menopause, and although the results were far from constant, on the whole he thought that the majority of climacteric cases had a subnormal systolic pressure. The major neuroses, on the other hand, in his experience, were relatively less frequent at the menopause. An important exception to this statement, however, was in the case of the artificial menopause following oöphorectomy during full sexual vitality. He had seen a number of cases of severe hysterical tremors, functional paraplegia, profound psychical changes, &c., without actual insanity in young women from whom the ovaries had been removed for ovarian or uterine disease. At the physiological menopause, on the other hand, graver hysterical phenomena were relatively uncommon with one exception. Pseudocyesis or false pregnancy was specially common at the time of the climacteric, and might be met with in stolid, level-headed women without other apparent nervous stigmata. When an undergraduate his first case in obstetric practice was one of this sort, and he remembered sitting up for many anxious nights with an apparently experienced multiparous patient who believed herself to be on the verge of labour. After several fruitless weeks he went for a holiday, and on his return found that, despite the combined efforts of the patient and various obstetric fellow students, the case had turned out to be one of false pregnancy after all. As regards the treatment of the climacteric neuroses and psychoses, he thought that a good deal could often be done to alleviate the patient's symptoms. Change of scene, removal from home worries, and careful attention to all the bodily functions were important. For the minor cardio-vascular symptoms and various subjective feelings of discomfort, he was in the habit of prescribing ammonium bromide, valerian, and aromatic spirit of ammonia, and frequently with highly satisfactory results. In his experience ovarian extract was of comparatively little value, except in the artificial menopause. Why this difference as compared with the neuroses following the ordinary menopause? He suggested that inasmuch as the climacteric was as much a physiological event as was puberty, any attempt to add ovarian secretion to the organism at the normal climacteric was essentially unphysiological. Instead

of juggling with a secretion which normally ought to be diminishing at the menopause, we should try to help the patient to develop the activity of the other internally secreting glands so as to attain a new physiological equilibrium which was as different from the pre-climacteric condition as this latter was different again from the condition prior to puberty. Thyroid extract, pituitary extract, suprarenal extract were all worthy of trial in suitable cases. In addition encouraging suggestions and reassurance of the patient were invaluable during the menopause until the attainment of post-climacteric equilibrium.

GYNÆCOLOGY AND OBSTETRICS.

WEDNESDAY, JULY 24TH.

President, Professor HENRY BRIGGS (Liverpool).

The PRESIDENT, after cordially welcoming the members and visitors, said that discouragements, from any source or of any kind, looming or threatening, in obstetrics must disappear under the combined influences of healthy mothers and children and an efficient obstetrical service. This last required the extension in populous centres of adequately equipped training schools in obstetrics for the medical student, the midwife, and the monthly nurse. He gave a brief *résumé* of the progress made in Liverpool in facilities for dealing with cases of obstetrical interest. The present accommodation for 24 in-patients and an average of 2000 out-patients per annum was much over-taxed. This difficulty would shortly be met by the modern maternity hospital of 85 beds to be erected through the generosity of Sir William Hartley. A central site had already been acquired, and the endowment fund had now reached the sum of £15,000. The President next referred to the important work done by the North of England Obstetrical and Gynæcological Society, and acknowledged the many public services rendered by Sir William Sinclair, of Manchester. In conclusion, he thought that the activity and the ability of the Royal Society of Medicine had amply compensated for the fusion of the London societies, and the Obstetrical and Gynæcological Section had maintained its high level.

Dr. W. S. A. GRIFFITH (London) opened a discussion on

The Results of Treatment of the Inflammatory Diseases of the Uterine Appendages.

Dealing with the medical aspects of treatment, he referred to the changes that had taken place in the conduct of these serious cases. In the past gynæcologists were content with very imperfect methods of treatment based on a simple knowledge of symptoms alone. To-day bacteriology and improvements in surgical technique had shown more accurately the underlying causes and extent of these inflammations of the uterine adnexa. Medical treatment resolved itself into (1) means to prevent infection and (2) means to arrest inflammation. Infection might be prevented, first, and he would lay special stress upon this, by instruction of the public regarding the dangers of gonorrhœa or an old-standing gleet in the male; secondly, by the proper care of women in labour; and, thirdly, by the use of antiseptics to prevent inflammations of the vulva and vagina from ascending to the uterus and tubes. With regard to the treatment of already existing inflammation of the appendages, our principles to-day were much the same as those advocated by the distinguished teachers of the past. Matthews Duncan, Charles West, and Scanzoni deprecated all surgical interference. It was even considered dangerous to incise collections of pus, and resort was had entirely to medical measures. The cardinal points thereof might be cited as follows: (1) General "common-sense" dicta with regard to the questions of diet, rest, and the condition of the bowels; (2) local depletion for the relief of pain and congestion by the application of leeches to the cervix uteri (this method had to-day been superseded); (3) poultices and abdominal compresses, associated with opiates and febrifuges; and (4) the application of mercurial and belladonna ointments when the chronic stage of the disease was reached, and the final exhibition of "tonics." Many of these measures were still in common use. At St. Bartholomew's Hospital between the years 1907 and 1910 the number of cases treated by medical means alone was 48. No deaths occurred, and the local conditions improved. Dr. Griffith then discussed a few of the newer methods of treating pelvic inflammation.

1. Thermal treatment. The use of hot compresses, he said, had led to the employment of hot air, either locally to the vagina and uterus, or generally by the use of hot air baths. He thought that the value of ordinary vaginal douches was very small in proportion to the time and trouble involved. He always employed and advocated continuous douches. 2. Radium was still on its trial, and they were much indebted to France for the work that was being done in this direction. In certain cases it appeared that adhesions were softened and that pain and discharge were improved. Dr. Griffith had personal experience of only one case, and it was too early yet to judge the results. The expense largely precluded the wide use both of radium and of X rays. 3. Serums and vaccines. The difficulty in the treatment of pelvic inflammation by serums and vaccines, he said, was to know what organisms were responsible for the disease. It did not follow that an acute vaginitis was always gonococcal, as stated by some authors. Furthermore, the bacteria and cocci isolated from the vagina and vulva were no index of the organisms present in the tubes. If it was definitely proved bacteriologically that an infection was due to the gonococcus, then much might be expected from vaccine treatment, especially in vulvo-vaginitis of children. The difficulty with regard to the results of vaccine treatment was the old *post hoc, propter hoc* fallacy. Dr. Griffith referred to the cases of pneumococcal vulvo-vaginitis reported by Chapple, of Guy's Hospital,[1] and also quoted instances of recovery in acute streptococcal vaginitis due to autogenous vaccines. He thought that vaccines were distinctly of value and worthy of more trial, but that they must always be subservient to surgical methods.

Mr. CHRISTOPHER MARTIN (Birmingham), discussing the subject from the surgical standpoint, said that he was not an advocate of surgical measures in all, or even the majority of cases of inflammation of the uterine appendages. Medical treatment must certainly be given a trial, and before surgical measures were adopted it was necessary to consider: (1) the natural course of the disease untreated; (2) the results of medical treatment; (3) the effects of the operation on the local disease; (4) the effect on the general health of the patient; and (5) the mortality of the operation. In other words, they should count the cost of an operation and consider whether the patient would be really improved by it. Undoubtedly many mutilating operations had been performed in the past where to-day conservative measures would be employed. Mr. Martin then discussed the value of surgical treatment in the various forms of tubal and ovarian inflammation. He considered that acute ovaritis rarely called for operation. It rarely passed on to abscess formation, and it was no more justifiable to remove such an ovary than to remove a testis, the seat of acute orchitis. If pus formed, then it was best, if possible, to drain the abscess by a posterior vaginal incision. It was thus opened at its most dependent position, certainly with less risk. If a second operation was required later for recurrence of fever and pain it was performed with much less risk if pus had already been evacuated in this way. He (the speaker) recognised three types of chronic ovaritis—viz.: (1) small, hard sclerotic ovary; (2) large, tender, congested organs; and (3) cystic and fibriotic ovaries, the cysts filled with serous or blood-stained fluid. These cysts frequently ruptured, setting up a chronic adhesive peritonitis, leading to the formation of extremely dense and widespread adhesions. Such ovaries gave rise to much pain and dysmenorrhœa and must be removed. Less severe cases could be cured by the separation of adhesions, by igni-puncture of cysts, or by partial resection of an ovary. If only a small portion of an ovary could be saved it was best to conserve it. Cirrhosis of the ovary, in the speaker's opinion, as a rule, was due to premature senility or repeated pregnancies. If extremely painful, such an ovary should be removed, but both organs should not be sacrificed. Also it was quite unjustifiable to perform double oöphorectomy in the case of a neurotic patient for the relief of pelvic pain. Salpingitis, he said, was nearly always the result of ascending infection, and the endometrium was usually affected also. In long-standing cases the adhesions were, as a rule, very dense and difficult to separate, but in many cases it was quite sufficient to separate all bands and open the abdominal end of the tube

[1] THE LANCET, June 22nd, 1912, p. 1685.

if closed. If this operation was combined with ventral fixation of the uterus it was quite possible to cure sterility and restore the patient to good health. It is important to examine the appendix whenever the abdomen is opened for pelvic inflammatory disease. If inflamed it should be removed, as inflammatory exudates due to this cause gravitated into the pelvis and firmly matted together the enclosed viscera. If the inflammation was localised to one tube only it sufficed to remove only the affected part. At the same time, the endometrium should be curetted to prevent infection of the opposite tube. If both tubes were infected Mr. Martin thought it was best to perform hysterectomy. The cure was more certain, and the uterus, if left behind, was not only useless but a source of further infection and purulent vaginal discharge. In cases of acute pyosalpinx he recommended a posterior vaginal incision. The diseased tube might be removed later if necessary. The mortality of operations for pyosalpinx would be much increased if laparotomy was frequently performed in cases of acute pyosalpinx.

Dr. F. W. N. HAULTAIN (Edinburgh) took exception to Mr. Martin's remarks on the unjustifiability of double oöphorectomy in all cases. Upon five occasions he had removed both ovaries for the cure of epilepsy which had defied all treatment, and in four cases he had had a complete cure. He also recalled a case of severe asthma which had been cured by this operation.

Dr. MARY A. D. SCHARLIEB (London) agreed with the views expressed in the opening papers. She firmly believed in the value of vaginal drainage, and considered that it formed an important preliminary and adjunct to all more radical operations by the abdominal route. While agreeing with the views expressed as to removal of the uterus in advanced tubal disease, she insisted upon the conservation of one or both ovaries. She emphasised the difficulty of hysterectomy in advanced cases of pelvic inflammation and considered that it was far more difficult than the modern operations for carcinoma of the uterus.

Dr. AMAND ROUTH (London) said that in a presidential address delivered a year ago he had expressed the wish that this question should be taken up.[2] He was much pleased to hear that the views expressed from Birmingham and London had coincided in regard to the importance of conservative measures. He personally always laid special stress upon sterilisation of the uterus in all cases of pelvic inflammation, and thought that the best agent for this purpose was iodine (1 in 4). Dr. Routh also referred to the beneficial effects of electric light and heat, and insisted on the importance of physiological rest and treatment of a chronic gleet in the case of an infected husband. He had had a very good result with vaccines in the case of an acute gonorrhœal vaginitis and salpingitis with doses of 10,000,000 organisms. In cases of acute pyosalpinx he considered that laparotomy should never be performed; it was better to wait until the pus was sterile. He had noted that in the abstract of Professor Bumm's paper, to be read next year at the International Congress of Medicine, it was stated that gonorrhœal pus was harmless if present in the peritoneal cavity. He certainly had not held this view before.

Sir JOHN BYERS (Belfast) thought that vaccine therapy had a great future before it. He personally had seen very good results from it. Unfortunately, only the late cases of pelvic inflammation came before the medical profession. He would like the public to be instructed in the causes which lay at the bottom of the whole question. Prophylaxis appeared to him to be one of the most important points involved. He was inclined to agree with Bumm, that the gonococcus did not cause acute sepsis. From observations made at the Belfast Maternity Hospital he felt compelled to admit that confinements associated with pure gonococcal vaginitis were not particularly dangerous from the maternal standpoint. He could not agree with Dr. Haultain with regard to the advisability of recommending removal of both ovaries as a recognised treatment for epilepsy and similar conditions.

Dr. J. B. HELLIER (Leeds) congratulated the section upon the opening papers. He had commenced his professional career when what might be called "oöphorectomania" was the rule, and he was glad to find that now unanimity of opinion on this point had been reached. He was not quite prepared to admit that the uterus had no internal secretion. Possibly it had one. In cases of acute purulent infections of the vagina he had found "yeast" suppositories of considerable value, and he now used them as a prophylactic before operations upon the uterus and its adnexa.

Mr. H. BECKWITH WHITEHOUSE (Birmingham) said that from a pathological standpoint it could not always be urged that the uterus was a further source of infection. For some months he had been making a bacteriological investigation upon uteri which had been removed in association with double pyosalpinx, and in the majority of cases he had found them to be sterile. This observation agreed with the existing ideas concerning the pus in chronic pyosalpinx, which was usually sterile. As a means of ascertaining in which cases virulent germs were present, Mr. Whitehouse had found that a bacteriological investigation of the menstrual blood was of considerable value. He collected the blood through a sterilised tube passed into the uterus after sterilisation of the cervix with iodine, and the cultures so obtained were investigated by a bacteriologist. He was quite in agreement with the views expressed as to conservation of the ovaries, and he thought that the question of autoplastic ovarian grafting should be considered. It was quite easy to implant a few minute grafts of ovarian tissue in the rectus muscle before the abdomen was closed in cases where it was necessary to remove both appendages for widespread disease, and such grafts might be of much use in preventing an artificial menopause. In two patients upon whom he had recently performed autoplastic grafting menstruation had continued.

Dr. C. E. PURSLOW (Birmingham) emphasised the importance of waiting in acute cases of pyosalpinx as the operation was much less devoid of risk if performed in a quiet interval. Certainly gonococcal cases would subside if left sufficiently long. This could not be said of the streptococcus.

Mr. F. EDGE (Birmingham) referred to "gummata" of the tube first noted by the late Professor John Taylor, and alluded to his teaching with reference to the great value of iodide of mercury in these cases. He thought that when patients had to work the most certain and rapid cure was complete removal of the affected parts.

Mr. J. J. BELL (Bradford) had had no very marked success with vaccines in gonococcal infections in the male. Out of 50 cases only two were cured by vaccines. He thought that a note of warning should be uttered concerning the many new methods of treatment advocated. He preferred the older and tried methods. As to the operation of posterior colpotomy, he would like to know how pus was diagnosed. He thought that it was dangerous to investigate dense adhesive swellings on the chance of opening a small collection.

Dr. FRANCES IVENS (Liverpool) thought that if a vaccine was administered at the time of operation it might prevent the formation of adhesions due to latent infection and obviate the necessity for further laparotomies. She did not quite agree with all the previous speakers, inasmuch as she also performed laparotomy in gonococcal infections and never drained. With B. coli infections, on the other hand, she was in complete accord with the other speakers.

Dr. J. E. GEMMELL (Liverpool) said that in his earlier years he well remembered the medical treatment of inflammatory affections of the tubes and ovaries. It was interesting to note, however, that out of seven cases, of which two were due to mixed infections and five to pure gonococcal infections, only the former had had later to be submitted to operation. He regarded the observations of Sir John Byers as very important and urged the education of the public in these matters.

The PRESIDENT said that he had had very favourable results from vaccine treatment, especially of rheumatic and painful joints, probably of pelvic origin. He was much interested in the observations of Mr. Whitehouse on the immunity of the uterus in cases of double pyosalpinx.

Dr. E. N. BURNET (Newcastle-on-Tyne) asked if tubal gestation had followed any of the conservative operations for tubal inflammation.

Dr. GRIFFITH, in reply, said that the discussion had followed the lines that he had anticipated. In other words, surgery had dominated. He knew nothing regarding "gummata" of the tubes and doubted their existence. He recognised, however, the value of mercury in treating pelvic inflammations. He hoped that Dr. Haultain's cases of epilepsy

[2] THE LANCET, Oct. 14th, 1911, p. 1060.

cured by double oöphorectomy would be published in detail. General statements were most misleading. He regarded the removal of both ovaries for dysmenorrhœa as most dangerous, and certainly not to be advocated. He was interested in Sir John Byers's remarks as to educating the public and the profession with regard to these matters. He had emphasised this very point in his opening remarks. Finally, with regard to conservative operations, he felt that with the exception of tubercular lesions it was the duty of the surgeon to save as much as possible. He knew of only one case of tubal gestation that had supervened upon tubal disease.

Mr. MARTIN, in reply, said that he could not agree with Dr. Haultain's remarks. The results of double oöphorectomy as a rule were disastrous. He quite agreed with the statement that in some cases of disease in the working classes it was advisable to operate where one would hold one's hand if it were possible for the patient to rest for a prolonged period. He was interested to hear that Mr. Whitehouse had found the uterus sterile in these cases. He had himself employed ovarian grafting upon one occasion, but the graft had died. With reference to "gummata" of the tubes, he thought that these might possibly be the result of a chronic caseating abscess, and that they were in no sense syphilitic.

BACTERIOLOGY AND STATE MEDICINE.

WEDNESDAY, JULY 24TH.

President, Dr. A. K. CHALMERS (Glasgow).

The PRESIDENT, after a few preliminary remarks, announced that the subject

B. Coli, its Varieties, and the Significance of their Occurrence in Water-supplies,

was open for discussion.

Dr. A. C. HOUSTON (London) stated that throughout his observations he had chosen the B. coli test as the indicator of water pollution, and explained that "typical B. coli" signified a colon bacillus yielding gas in lactose cultures and indol in peptone water cultures—i.e., lactose and indol +. By means of two tables it was shown that typical B. coli might be absent from as large a quantity as 10,000 c.c. of a water of known purity, but that if 1/10000th of a cubic centimetre of sewage was added to 10,000 c.c. of sterile water (i.e., 1 part sewage in 100 million parts of water) typical B. coli could be recognised by bacteriological tests. Dr. Houston laid down the following requirements which must be conformed to by any microbe indicator which was suggested as an indicator of pollution of water: (*a*) It must be superabundant in excremental matters; (*b*) absent or present only in comparatively small numbers in water free from undesirable pollution; (*c*) a decadent microbe when divorced from the animal body. B. coli conformed to all these requisites, since he had already shown that at a very low estimate there were 100,000 B. coli present per cubic centimetre of crude sewage, and 1,000,000 per gramme of human fæces; of 1331 samples of Kent deep well waters 94 per cent. showed no B. coli in 100 c.c.; B. coli removed from the animal body and kept at 20° C. either in sea water or tap water dies usually in from three to nine days. In its purely negative aspects the value of the B. coli test is almost beyond the pale of criticism, but it is necessary to remember that it gives no guarantee of the absence of positive results in the future, nor does it eliminate the possibility of infection of the water by typhoid bacilli without colon bacilli from the urine of a carrier case. The positive aspects of the coli test require always to be interpreted in relation to topographical conditions. Waters may be classified as first class when typical B. coli is absent from less quantities than 100 c.c.; second class, absent from less than 10 c.c.; third class, absent from less than 1 c.c.; fourth and succeeding classes on the same decimal basis, but even a water of the third class might under certain conditions be passed or one of the first class condemned. Adopting the first-class water as a standard, the risk of passing supplies which ought to be condemned is reduced to a minimum. Of 7091 samples of London water samples examined in 1911 76·6 per cent. contained no B. coli in 100 c.c. As an indicator of the efficiency of purification processes, whether filtration or storage, the B. coli test stands without a peer, and beyond question, if properly applied and the results interpreted with discretion, is the sheet anchor of the practical water bacteriologist. Dr. Houston then passed to a consideration of the varieties of B. coli, and showed that at least 19 apparent varieties could be differentiated by means of their fermentation reactions. In the speaker's experience primary lactose media yielded the largest number of typical B. coli in hot and sunny weather, whereas in cold winter weather glucose primary media gave the best results. Dr. Houston summarised the present position by stating that typical B. coli (lactose + indol +) is present in enormous numbers in excremental matters, and is absent from, or present only in small numbers in, substances free from undesirable pollution. Typical B. coli is a decadent microbe when divorced from the animal body, hence its presence in a water in any number probably points to fairly recent pollution. Pure waters, generally speaking, contain no typical B. coli in 100 c.c. in a majority of representative samples, and incidentally it may be stated that impure waters can be so purified as to yield similar results at a not unreasonable cost. Even so lenient a standard as "no typical B. coli in 1 c.c." of water in a majority of representative samples implied that the supply is not habitually contaminated with 1 gallon of sewage (or its bacteriological equivalent) even in 100,000 gallons of water. The 10 c.c. and 100 c.c. standards—i.e., no B. coli in these amounts—obviously connote the absence of 1/10th and 1/100th gallon of sewage respectively from a like volume of water. With too severe standards there is a danger of condemning reasonably safe supplies, and with too lax standards there is the possibility of "passing" waters which ought properly to be condemned. Always to steer safely between the Scylla of the one and the Charybdis of the other may be difficult or impossible without the aid of a pilot familiar with all the local conditions. The B. coli test ought to be regarded as a quantitative decimal enumeration of "lactose + indol +" microbes, but the subsequent grouping, according to certain attributes of the organisms thus obtained, into fairly stable or apparent varieties, may be of real practical or diagnostic importance. Standards are worse than useless if they be not interpreted with discretion and in relation to local and other conditions. Instances could be quoted where even similar B. coli results ought not improperly to lead to dissimilar conclusions as regards quality and safety. The B. coli test even alone is of the greatest value, but a water-supply should be finally judged on a summation of verdicts (geological, topographical, physical, bacteriological, and chemical). The B. coli test is by far the most reliable and speediest method of judging the degree of efficiency of the particular water purification process under investigation, and when a sterilisation treatment is in operation the certified destruction of B. coli should afford absolute proof, practically speaking, of the devitalisation of all the microbes of epidemic water-borne disease. The B. coli test having now survived the various vicissitudes of an earlier time, stands to-day as the most practical and delicate and rapid test for excremental filth, and may surely be taken as the most reliable indicator in its positive aspects of possible danger, and in its negative aspects of the almost certain absence of the microbes associated with epidemic water-borne disease, and, generally speaking, as the one test which, above all others, is least excusable for a water analyst to omit. All the counts in the indictment charges against the B. coli test when fully marshalled amount to no more than this—the test is only or mostly of *relative* not absolute value, and therefore the results should be interpreted with discretion.

A contribution by Dr. W. G. SAVAGE (Somerset), who was unable to be present, to the discussion was read by one of the secretaries. Dealing first with the properties expected of a bacterial indicator, Dr. Savage, like the preceding speaker, laid stress on the following points: (1) It should be abundant in the substances for which its presence serves as an indicator; (2) it should be absent, or at least relatively absent, from all other sources; (3) it should be easily isolated and numerically estimated; (4) its characters should be definite and not liable to variation whereby its features may be lost. Since B. coli is used by the bacteriologist as a test of purity of water-supplies, its nature must be studied. Culturally this must be done either by fundamental tests, or by the use of an extended series of sugar or other reactions. The last method, though of great value for some purposes, does not at present greatly help in water

analysis, in that it does not differentiate the sources of the strain. The former method demonstrates that excremental strains react with great uniformity to the fundamental tests; on the other hand, strains from water, soil, &c., show a large proportion which fail to give all the fundamental tests. In polluted soil particularly are atypical strains of B. coli to be found. This may be due to (1) variations in typical strains due to altered surroundings, or (2) to the altered conditions favouring the increase of the relatively small proportion of atypical organisms present in the intestinal tract. The effect of these two factors has not yet been satisfactorily worked out. The more nearly the organism isolated resembles an excretal B. coli the greater is its significance as an indicator of pollution. Again, the distribution of B. coli in nature should be studied, but so far no essential differences can be shown to exist in strains of B. coli isolated from man or from animals, from the healthy individual or the diseased. Regard must always be paid to the numbers of B. coli present in the water investigated. This organism is a *measure* of excretal pollution. A further point is that its presence is of much greater significance than its absence. The one drawback to bacteriological examination of water-supplies is that they only indicate existing conditions; they do not show liability to contamination which is not actually taking place.

Dr. W. WRIGHT (Glasgow) pointed out that the presence of B. coli and its varieties in water-supplies acquired its importance particularly with reference to the possible causation of enteric fever, and contrasted the incidence of this disease upon the population of Glasgow and Manchester—two cities consuming unfiltered water—on the one hand, with Liverpool and Birmingham with their filtered water-supplies on the other, pointing out that after eliminating all the cases of typhoid fever in which the source of infection could be traced there remained 74 per cent. in Glasgow and 46 per cent. in Manchester in which the mode or modes of propagation of the disease were undiscovered. Bacteriological examination of the Loch Katrine water (which is the Glasgow supply) showed the presence of coliform organisms in steadily increasing numbers during the years 1909-10-11, whilst the number of cases of typhoid fever in the city of Glasgow during the same period has as steadily diminished. Precisely the same phenomena are observed in Liverpool. Dr. Wright therefore concludes that the condition of the water-supply bears no relation to the incidence of enteric fever in either of these cities, and that another explanation must be sought for those cases in which at present the source of infection remains quite unknown. Instancing the case of Birmingham, which in 1907 possessed 12,100 pan privies and a typhoid incidence of 0·45 per 1000, and in 1910 only 5509 pan privies and a case incidence of 0·13 per 1000, the speaker dwelt on the importance of removing decomposable filth from the neighbourhoods of dwellings, and on the necessity for thinning out where possible densely populated areas. He finally suggested that the continued ingestion of polluted water might well act in a beneficial manner by producing at any rate a partial immunity in its consumers which prevented infection by water-borne typhoid.

Dr. M. J. OLIVER (St. Boswells) pointed out that Dr. Wright was incorrect when he stated the impossibility of pollution occurring in supply-pipes where the contained water was under pressure, since flowing water differed from still water, and any obstruction, intentional or accidental, within the pipes produced a sudden alteration in the effective diameter, and so gave rise to syphon action; and further, that at any rate in some portion of their course, the pipes were usually above the hydraulic gradient, a fact which resulted in the production of a negative pressure which favoured the entrance of pollution from without.

Dr. W. G. WILLOUGHBY (Eastbourne) asked whether the absence of B. coli from 100 c.c. of a water-supply indicated absolute safety, and if B. coli disappeared from stored water within nine days was there any guarantee that B. typhosus did the same?

Dr. C. O. STALLYBRASS (Liverpool) admitted the close relationship that had been shown (in the United States) to exist between sewage-polluted water-supplies and the incidence of diarrhœa, which was parallel to that of enteric fever in cities with such supplies, but pointed out that the 50 per cent. of "untraced" enteric fever cases in Liverpool in 1911 were *unequally* distributed throughout the city. Investigation showed that these cases could be grouped into a central area, characterised in the past by numerous insanitary courts provided with common trough closets, and a peripheral well-built sanitary area, and that the case-incidence in the central area was five times as heavy as that in the peripheral area. This, he contended, showed that a large proportion of the cases were to be accounted for by the housing conditions rather than to be attributed to the water-supply. This inference was supported by the high correlation figure found for the reduction in cases of typhoid fever in Liverpool and the demolition and reconstruction of courts in the central area.

Dr. W. J. PENFOLD (London) pointed out that in fæces and urine non-lactose fermenting organisms were frequent which fermented lactose after a short selection on a lactose medium. So that the non-lactose fermenters were apparently sometimes closely related to B. coli Escherich, and sometimes not so related. It seemed, therefore, desirable to examine the nature of those organisms which did not give immediately the test of lactose fermentation to determine the closeness of their relationship to B. coli proper. Further, a consideration of MacConkey's work suggested that B. vesiculosus was relatively characteristic of human fæces, and consequently the use of an extended series of sugar tests was of practical value.

Dr. RICHARD JONES (Festiniog) detailed his own position in illustration of the difficulties confronting the medical officer of health in connexion with water problems. The population of his district numbered 12,000, and during the ten-year period 1868-78, 12 deaths from typhoid fever occurred per annum. A new water-supply was obtained in 1879, and for the next ten years the deaths from enteric fever fell to 1 per annum, and for the past 18 years there had been no enteric fever in the district. Recently the water had been examined and B. coli found in 1 c.c. quantities, and in one sample in 0·1 c.c. An inquiry had consequently been held and an expenditure of £3000 recommended, as the Local Government Board inspector took a serious view of the presence of B. coli. Now the water-supply was from a natural lake 1300 feet above sea level, with no possibility of contamination from human source, but it was visited by swarms of geese during the summer months. Could they be responsible for the B. coli in the water-supply? No medical officer of health hearing the discussion would unhesitatingly advise a large expenditure on the removal of B. coli in an otherwise pure supply, especially when no enteric fever existed in the district.

After Professor J. RITCHIE (Edinburgh) and the PRESIDENT had commented upon the points raised by the various speakers, and laid stress on the necessity for interpreting the results of bacterioscopic analysis in the light of local topography, Dr. HOUSTON and Dr. WRIGHT briefly replied. Then the following resolution, proposed by Dr. OLIVER, and seconded by Professor RITCHIE, was unanimously carried:

That this conjoint meeting of the sections of State Medicine and Bacteriology unanimously desires strongly to urge that no opinion as to the quality of a water for dietetic purposes should be arrived at on bacteriological evidence without a local and topographical inspection of the sources of the supply made by a competent observer.

The secretaries were instructed to convey this resolution to the Council of the Association, and the meeting then adjourned.

ANATOMY.

WEDNESDAY, JULY 24TH.

President, Professor WILLIAM WRIGHT (London).

The PRESIDENT, in opening the meeting, observed that from the great interest of the subjects selected for discussion there was every promise that this would be a most successful meeting. He especially welcomed the discussion upon the formation of bone, which was one of the very oldest problems in anatomy, one to which John Hunter had given his attention, and one on which Sir William Macewen had expended a vast amount of patient toil. There were so many aspects of this most important question that he felt some doubt as to which was the most proper one to submit to the meeting for final discussion.

Sir WILLIAM MACEWEN (Glasgow) then opened the discussion by delivering his paper on

The Development and Growth of Bone, Normal and Abnormal.

He, like the President, felt that the problem was such a wide one that it was essential to limit the discussion to one more or less definite issue, and he had chosen the more strictly anatomical aspect of bone formation as the most suitable. One evidence of the vastness of the subject was the extraordinary wealth of its literature, a condition which made it impossible for anyone doing real research work to even attempt a *résumé* of the literature in the paper embodying his results. It was futile to level it as a criticism of original work that the author did not quote in his writings all the previous papers on the subject. From the anatomical point of view the osteoblasts were the first subjects for investigation. Concerning these cells and their origin very divergent views were held; some believed that they were cells which had nothing to do with the pre-existing cartilage cells, but his researches had led him to the very definite conclusion that the cartilage cells themselves became osteoblasts. If the cartilage did not give rise to these cells, then what was its function in the body? It had been said to be a scaffolding, but of that there was no sufficient evidence. On the other hand, cartilage was always potentially present in bone and could be reformed from bone—a fact commonly demonstrated in repair of fracture, in the formation of nodes upon bone, and irregular bony growths of rickets. Cartilage, he maintained, was merely a phase in bone formation; but there were instances in which cartilage never appeared in bone formation, and in these cases it was found that bone was being formed rapidly and under the best possible conditions. Experimentally bone might be grown in glass tubes, and in these experiments it was formed direct from osteoblasts and no cartilage was produced; but if some movement was imparted to the developing bone then cartilage appeared. The rôle of the periosteum as a bone-forming membrane was next discussed and a series of most convincing lantern slides showing the result of experiments was exhibited. When all the periosteum was stripped from a growing bone the growth still continued, but when the bone was removed and the periosteum was left intact no regeneration took place. Formerly it was taken as conclusive evidence of bone growth from periosteum that a metallic ring placed round the bone beneath the periosteum became covered by a superficial growth of bone, and this bone was regarded as being laid down from the periosteum. These experiments had been repeated on bones from which all periosteum had been removed, and in these experiments the rings had become as completely covered by bone as in those in which periosteum remained *in situ*. Attention was next called to the growth of bone from fragments, and photographs were shown of spicules of bone growing where they had been transplanted upon omentum. Spicules were grown in media in glass tubes, and even bone fragments retained in the meshwork of a sponge embedded in connective tissue continued to grow. Since all bone fragments grow from their periphery, better results are obtained from transplanting spicules of bone than from attempting to graft massive portions of bone into gaps in continuity. Evidence was next taken from the well-known cases of bone developed in abnormal sites. An interesting case was detailed in which after severe trauma bone was developed in the thickness of muscle, a development so complete that owing to the necessities of movement a joint was actually formed between two portions of this abnormally formed bone. Cartilage as well as bone was present in this new formation.

The PRESIDENT thanked Sir William Macewen for his paper, and regretted that owing to the limits of time the discussion would have to be narrowed down, and in the first place he would ask those actually engaged in this research to open the discussion.

Professor A. CAMPBELL GEDDES (Dublin) then gave the results of work recently undertaken in Dublin to clear up some points in this problem. He agreed with Sir William Macewen that periosteum was not an active agent in bone formation, but that osteoblasts were formed from cartilage cells he felt some difficulty in believing. Professor Geddes then described at some length the staining methods which he had employed and the optical devices for making the results more perfect. As the result of employing these methods osteoblasts gave staining reactions different from those displayed by cartilage cells. The cartilage was the scaffolding into which the osteoblasts migrated, and in which they were protected from pressure. The cartilage matrix he regarded as being mesoblastic, but the osteoblasts were probably epiblastic, and in the developing femur evidence of the invasion of superficial cells having the staining reactions of osteoblasts could be demonstrated by his methods. The cartilage which potentially existed in adult bone, and might in certain instances be re-developed from bone, was the remnant of this mesoblastic inclusion in the epiblastic bone.

Professor A. MELVILLE PATERSON (Liverpool) dwelt on the importance of the whole subject to anatomists, and he urged that there was evidence that microscopic and macroscopic anatomy should never have been divorced. The anatomist who taught gross anatomy should at the same time teach the minute structure, and the reform by which these two subjects should be again brought under one department was one in urgent need of accomplishment. Bone formation he regarded as a chemical process brought about *in situ*, and stimulated for the most part by stress within the bone. It was a formation as a result of irritation, and always occurred at a point of stress. The ultimate element was a primitive connective tissue cell which could develop into a perfected connective tissue cell, a cartilage cell, and a bone cell, and could arrive at bone through an intermediate cartilaginous stage.

Mr. D. DOUGLAS-CRAWFORD (Liverpool) confirmed the practical utility of the teachings of Sir William Macewen, especially with regard to the success which met the transplantation of chips or shreds of bone.

The PRESIDENT thought it would be more correct to exempt the membrane bones of the vault of the skull from Sir William Macewen's generalisation that cartilage was potentially present in all bones. The points brought out in the discussion were of the utmost interest from the point of view of the comparative anatomist, for the stages described fitted in well with the known evolution of the skeletal tissues, and from that point of view he regarded cartilage as an atavistic skeleton, and welcomed the idea that bone was of epiblastic origin.

Sir WILLIAM MACEWEN then replied, and refrained from criticising the views of Professor Geddes until he had more time to appreciate them fully. At the same time, he did not place so complete a reliance on the staining reactions as to draw far-reaching conclusions from them alone.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, JULY 24TH.

President, Professor W. E. DIXON (Cambridge).

The Section of Pharmacology and Therapeutics met in the Physical Chemistry Class-room of the University.

The PRESIDENT, after extending a hearty welcome to those attending the section, pointed out that it was only when the Association visited a university town that the profession was sufficiently interested to insist on the importance of a section devoted to pharmacology and therapeutics. But the increasing importance of the subject was proved by the fact that since the section last met a *Journal of Pharmacology and Therapeutics* had been established in this country. The journal was published under the joint editorship of Professor Abel in America and Professor A. R. Cushny in this country. It was most important to have a journal representing the interests of this subject.

Dr. A. GOULSTON (Exeter) then read a paper on

Dextrose in the Treatment of Certain Forms of Heart Disease.

He said he had given cane sugar with much benefit, especially in cases of failing heart with fibrillation, for the past eight years. The improvement was permanent in a large proportion of cases, and he regarded it as a valuable addition to therapeutics. He did not believe that the benefit resulted from the introduction into the circulation of dextrose itself. There was something else which so far chemistry had not revealed. The sugar used must be absolutely pure West Indian cane sugar, *not beet sugar*. He quoted several cases to prove how different the results were if the latter was employed in the treatment. He pointed out that in the feeding of bees the syrup used must be made with West Indian cane sugar, as if beet sugar were used the

bees generally died. The sugar was given in solution up to 4 oz. per diem by the mouth. The paper was illustrated by lantern slides indicating the improvement in the pulse tracings in cases of cardiac failure treated in this way.

The PRESIDENT, Professor F. J. CHARTERIS (Glasgow), and Dr. O. T. WILLIAMS (Liverpool) took part in the discussion, and Dr. GOULSTON replied.

Dr. O. T. WILLIAMS (Liverpool) next read a paper on

Cod-liver Oil and its Action in Phthisis.

After referring to earlier work in which he had shown the markedly beneficial effects of cod-liver oil on fat absorption and nitrogen absorption, Dr. Williams mentioned some further cases in which cod-liver oil undoubtedly increased nitrogen retention also. His experiments in conjunction with Dr. Maclean and Dr. Forsyth had shown that cod-liver oil had a definite action on the metabolism of phthisis. In cases under observation the increase in fat absorption and in nitrogen absorption at once diminished when the oil was stopped for a period. The evidence went to show that cod-liver oil had some influence upon the fatty envelope of the tubercle bacillus, but he was unable to say whether this lessened the infectivity of the organism. With reference to predisposition to phthisis in the case of diabetics, Dr. Williams said he had found a relative increase of saturated fatty acids in the blood in this condition, and in this matter he mentioned experiments which Dr. Mildred Powell and himself had conducted, which tended to show that the *unsaturated* fatty acids had an inhibitory effect on the growth of the tubercle bacillus. Dr. Williams next referred to the high regard in which cod-liver oil was held by earlier writers, and compared the earlier statistics of Williams (1868) with Bardswell's more recent statistics. He had come to the conclusion that in spite of the discovery of the tubercle bacillus and the beneficent effects of recent discoveries, there had been no striking advance in the treatment of the disease. Dr. Williams next gave the results of an examination of the various cod-liver oils on the market. Facts were given to support the contention that the activity of the oil did not depend upon the presence of iodine or phosphorus. Indeed, a consideration of the methods of preparation of the oils examined had led him to believe—in confirmation of Carles's work—that the presence of small quantities of iodine, phosphorus, and various other bodies in cod-liver oil was due to decomposition. From observation and experiment Dr. Williams concluded that the therapeutic effect of the oil was largely due to the amount of unsaturated fatty acids it contained and not to the impurities referred to.

Dr. J. G. SHARP (Leeds) thought the paper was a most valuable one at the present juncture. There had been too much tendency to do without cod-liver oil in favour of fresh air. There was no difference in the longevity of phthisical patients at the present time from the state of affairs prevailing 50 years ago. He remarked the small incidence of tuberculosis in the case of the Jews and the St. Kildans, which he thought was largely due to the amount of fat taken as food. He recommended 10 drops in milk as a commencing dose in intolerant cases.

Professor C. R. MARSHALL (Dundee), Professor J. H. ABRAM (Liverpool), Professor CHARTERIS, and the PRESIDENT also took part in the discussion, and Dr. WILLIAMS was accorded a hearty vote of thanks for his valuable paper.

Professor C. R. MARSHALL (Dundee) then followed with a short paper on

Clinical Experiences with Tetrahydropapaveroline Hydrochloride.

This alkaloid, he said, was originally prepared by Pyman and investigated physiologically by Laidlaw, who found that it inhibited the tone of unstriped muscle fibre, especially that of the blood-vessels, bronchioles, and uterus, and further that it stimulated the heart. Professor Marshall found both by perfusion experiments and cardiometric tracings, with an intact circulation, that the rate of heart-beat increased greatly and that its force was augmented. Intravenous injections of 3 to 10 mg. in the case of anæsthetised animals caused rapid and marked fall of blood pressure. The substance was also found to be non-toxic. These facts suggested that it might be of value as a therapeutic agent. The results of a number of cases treated were, in this respect, disappointing. Of four cases treated three were suffering from arterio-sclerosis associated with chronic Bright's disease; the fourth was a case of myocarditis and pericarditis with emphysema. The administration of the drug produced no obvious effect on the pulse tracings and less effect on the blood pressure than 2 grains of sodii nitris or ½ grain of erythrol tetranitrate. It also failed to prevent attacks of dyspnœa. In cases in which the symptoms of heart failure became more manifest no relief was obtained. These unsatisfactory results may have been due to the employment of insufficient doses, but more probably they were due to the ease with which the drug oxidises.

Dr. SHARP and the PRESIDENT made some comments on Professor Marshall's paper.

Professor F. J. CHARTERIS (Glasgow) communicated his observations on

The Comparative Value of Arsenious Acid and of Salvarsan in Blood and Other Non-syphilitic Diseases.

He contrasted the therapeutic value of these drugs in Hodgkin's disease, leukæmia, chorea, and pernicious anæmia. In all of these conditions he found that clinically arsenious acid brings about a temporary improvement, though rarely complete cure. The method of action, he affirmed, was quite unknown, and there was no effect on the blood-forming tissues of the bone marrow. On the theory that salvarsan might act upon the unknown causes of these obscure blood conditions, this preparation was tried in these cases, but without any result which would indicate that it is of more value than the inorganic acid. In two cases of pernicious anæmia, indeed, the intravenous injection of salvarsan had caused such a state of anæmia that the patients died within three weeks. Neither in chorea nor leukæmia did the injection of salvarsan prevent the appearance of complications. In the former an endocarditis ran a normal course, and attacks of perisplenitis still occurred in the leukæmic cases. Experiments on rabbits in the form of salvarsan injections resulted in a mild stimulating effect upon the bone marrow analogous to that produced by the inorganic acid.

This ended the proceedings and the section then adjourned.

PHYSIOLOGY.

WEDNESDAY, JULY 24TH.

President, Professor J. S. MACDONALD (Sheffield).

The PRESIDENT opened the meeting with a few well-chosen words in which he declared the pleasure he had, as an old worker in the physiology department of the University of Liverpool and an old research scholar of the Association, of being president of the section. He then showed some interesting figures in which he demonstrated that there was an antagonism between the serum and the blood corpuscles. He also gave an interesting demonstration of simultaneous colour contrast, and paid a graceful compliment to Professor C. S. Sherrington's work.

Dr. F. W. MOTT (London) opened a discussion upon

The Bio-physics and Bio-chemistry of the Neuron,

illustrating his remarks by means of lantern slides. He commenced by laying great stress upon the examination of unstained and of living nerve-cells, and threw doubt upon the evidence of staining methods in as far as the actuality of the structures demonstrated is concerned. The fresh nerve-cell—or the living and unstained nerve-cell—when examined in the ordinary manner under the microscope showed only a homogeneous mass. There was no evidence either of such structures as the Nissl granules in the cell body or of the fibrils in the cell body or axon. But under the ultra-microscope there were differences in the luminosity of the cells, and these differences were variable. He then turned to the consideration of Harrison's work on the growth of embryonic nerve-fibres, and emphasised his demonstration of amœboidism in the growing fibres. The next subject to receive his attention was the degenerations of the cell bodies in different states of the nervous system, such as division of the motor nerve, lead poisoning, experimental anæmia, and hyperpyrexia. Amongst the physical factors in degeneration he laid stress upon the occurrence of endosmosis as demonstrated by swelling of the cell, displacement of the Nissl bodies and of the nucleus, &c. He noted the occurrence of endosmosis in the case of the nucleus itself, and in connexion with the degeneration of nerve-cells which follows

anæmia—for instance, of the cerebrum—he showed that if the nucleus is extruded the cell dies, but that if it is not extruded the cell may recover. In the status epilepticus the state of endosmosis of the nerve-cells is very strongly marked. Dr. Mott emphasised the factor of the lack of oxygen in the production of these changes of the nerve-cells. In bringing his remarks to a close, Dr. Mott described the state of amaurotic idiocy which occurs in Jewish children and is characterised by a change in the Nissl granules of the cortical cells.

Professor C. S. SHERRINGTON (Liverpool), in continuing the discussion, welcomed the members of the section to his laboratory. In connexion with the subject of debate, he particularly emphasised the value of unstained preparations, particularly of living nerve-cells, in the study of the central nervous system, and agreed with Dr. Mott that the interpretation of the Nissl bodies and the neuro-fibrils as actual structures in the living cell must be received with the greatest caution. But he thought that even if these bodies were artifacts, they were of great use in enabling a conception of the substances from which they were formed to be arrived at. He further treated of the question of endosmosis, and put forward the question of the nature of the structural contact between two neurons.

Dr. J. O. WAKELIN BARRATT (Liverpool) spoke of the physics of the phenomenon of excitation of the neuron. He gave an interesting history of Nernst's theory and of the recent developments of it, and of the objections which had been raised against it. He spoke of Nernst's original ideas and of the work of Keith Lucas, Fröhlich, Hill, as well as of the work which he and Nernst did in collaboration.

The PRESIDENT spoke first of the question of the physical insulation of the nervous system, receptive end-organs, nerve trunks, and the central nervous system itself. He then turned to the question of the energy changes in the central nervous system. He suggested that the muscles might perhaps be regarded as "energy pumps," inasmuch as by their proprioceptive mechanism they retransmit impulses to the central nervous system. He emphasised the very small amount of energy needed—for the central nervous system sends out only about 0·0001–0·00001 of the amount of energy discharge of the body in its activity. He then suggested that the rôle of oxygen in the central nervous system might perhaps be that of a scavenger, and proceeded to examine at length the constitution of the axon and nerve-cell body. Here he gave an account of his own theory of nervous activity. He rejected the idea of the nerve fibre as an insulated path and the cell body as the battery. In its place he suggested that the nerve may be regarded as equivalent to a series of batteries. He showed some most interesting lantern slides of nerve fibres in different states which demonstrated precipitation figures in the axis cylinders, and the formation, as it were, of neuro-fibril-like structure by precipitation.

Professor MACALLUM (Toronto) also laid stress on the danger of regarding the cell from the standpoint of fixed and stained specimens only. He particularly emphasised the importance of surface tension in the activities of the nerve cells. He showed the peculiar distribution of potassium in the neuron and in vorticella, as well as in other marine organisms. He then spoke of the growth of divided nerves in regeneration, and suggested the maintenance of surface tension of the cell body as a cause of the outgrowth.

Professor BENJAMIN MOORE (Liverpool) joined with the other speakers in the debate in laying stress on the danger of stained specimens. He also stated that the factor of surface tension was not the only important one, and that further information on the relationship of electrolytes to colloids was urgently required.

Dr. J. HADDON (Hawick) emphasised the importance of clinical evidence.

Dr. VERNON (Oxford) considered the question of the importance of staining in relation to the minute structure of the cell bodies in the central nervous system, and went into the question of certain vital stains.

Dr. T. GRAHAM BROWN (Liverpool) again returned to the question of the energy changes in the central nervous system during its activity, and considered the problems of the source of the energy discharge.

Dr. MOTT in terminating the debate answered at length the various questions raised. He particularly laid stress on Harrison's demonstration of amœboidism in growing nerve fibres, and considered the question of the energy in the central nervous system.

THE ANNUAL EXHIBITION.

(*Continued from p. 272.*)

III.—DRUGS.

The stalls devoted to the exhibition of drugs and pharmaceutical preparations were fewer in number than usual, though the exhibits were well worth inspection, as here and there new developments, generally in the direction of elegant formulæ, effective combinations, convenient methods of administration, refinements in sero-therapy, and so on, were to be found. Messrs. Parke, Davis, and Co., of 50, Beak-street, Regent-street, London, W., gave an interesting experimental demonstration of the amylolytic properties of taka-diastase, a remarkably powerful ferment which is suggested for use in starch indigestion. It is said also to show a digestive action upon fibrin. We reported some years ago some laboratory experiments with this active amylolytic, but its properties have since been developed for medical application. The exhibit included besides a series of standardised fluid extracts and organic substances from the suprarenal, ovarian, and thyroid glands, and a number of bacterial vaccines prepared in the laboratory of St. Mary's Hospital, London, under the direction of Sir A. E. Wright. Messrs. Zimmer and Co., Frankfort-on-the-Maine, were represented by Messrs. Widenmann, Broicher, and Co., of 1, Fenchurch-avenue, London, E.C., who made the stall attractive by exhibiting large specimens of crystalline substances. Amongst recent remedies were aponal, a hypnotic chemically known as amylene-hydrate carbamate, and recently noticed in our analytical columns; rheumatin, a quinine salicylate suggested as an anti-rheumatic; and the well-known compound of menthol and valerianic acid, described as a stimulant, sedative, and preventive of *mal de mer* and train-sickness. Messrs. E. T. Pearson and Co., Limited, of 49, Watling-street, London, E.C., exhibited a series of vasogen preparations in which vasogen, a partially oxygenated mineral oil, proves a valuable vehicle for the administration of many drugs, of which may be mentioned iodine, guaiacol, iodoform, menthol, sulphur, and mercury. At the same stall specimens were shown of an interesting substance called lactagol, an extract of cotton seed which is peculiar in serving as as a galactagogue. It appears not only to increase the amount of milk but to enrich the quality also. The effect of a dietary of cotton cake on the flow of milk of cows led to the isolation of the active principle which is now available for human administration.

A fine series of pharmacentical preparations with a big selection of synthetics was shown by the Bayer Co., Limited, of 19, St. Dunstan's-hill, London, E.C. These included adalin, an ethyl acetyl urea containing bromine in the molecule, but apparently its hypnotic properties are not referable to the halogen; ferro-sajodin, an organic iodine and iron combination of which good reports are given in cases of scrofulous and rickety children; and theocin-sodium acetate, a diuretic which can be usefully combined with digitalis. Messrs. Reynolds and Branson, of Leeds, exhibited a series of elegant elixirs, and amongst other novel preparations were iodo-krolein, a combination of iodine with wool-fat, and a special preparation of ergot tested physiologically and clinically. The preparation of hydrated magnesia which has now been associated for some time with the Charles H. Phillips Chemical Co., of 14, Henrietta-street, Covent Garden, London, W.C., formed the feature at this firm's stall. In appearance it resembles an emulsion and is an effective antacid whilst possessing also a mild aperient action. Messrs. C. J. Hewlett and Son, Limited, of 35–42, Charlotte-street, London, E.C., showed a very interesting collection of thoughtful pharmaceutical preparations, amongst which merit is specially due to their misturæ, chief of which is the pepsine and bismuth preparation. Messrs. A. Wulfing and Co., of 12, Chenies-street, London, W.C., exhibited specimens of formamint, and more prominently albulactin, the albumin of cow's milk made soluble by a special process. The most encouraging results are being obtained by the addition of this to diluted cow's milk in infant feeding. Angier's emulsion was one of the first preparations introducing petroleum in internal treatment. It contains the hypophosphites of lime and soda with glycerine and a

third part of petroleum. The exhibitors were the Angier Chemical Company, Limited, of 86, Clerkenwell-road, London, E.C. Messrs. Huxleys, of Galen Works, Dingwall-road, Croydon, showed a very complete series of novelties in pharmaceutical products, showing real knowledge of the physician's and patient's requirements. There were glycerophosphate syrups, sal-antisepticus, a compound antiseptic powder for making lotions and gargles, and the nucleo-enzymes of the various glands in suitable forms and combinations.

Messrs. Oppenheimer, Son, and Co., Limited, of 179, Queen Victoria-street, London, E.C., showed a collection of pharmaceutical products and appliances of an admitted standard of excellence, including their aerisers and vaporisers, colloidal preparations of silver and mercury ("collosols"), oxygen generator and inhalator, pulticine (a scientific poultice); pulverettes, medicaments in powdered form contained in a fragile shell; and sea-water plasma for hypodermic injection sterilised in aseptules. Messrs. Evans, Sons, Lescher, and Webb, of 56, Hanover-street, Liverpool, and of London, had a combined exhibit of pharmaceutical and bacteriological preparations. Special attention is given by this firm to the preparation of anti-diphtheritic serum and to the various tuberculin preparations obtained under special supervision at their bacteriological laboratories at Higher Runcorn. The exhibit of Messrs. A. and M. Zimmermann of 3, Lloyd's-avenue, London, E.C., covered a wide range of utility. There were, for example, the pharmaceutical products of Messrs. Kalle and Company, including Biebricher scarlet for the treatment of obstinate ulcers, wounds, and burns, the dye promoting epithelial growth in a remarkable way; bioferrin, an organic iron preparation; the organo-therapeutic products of von Poehl, ovarinum, prostatinum, spermin, cerebrinum, adrenalchloride, and a number of synthetics. Hormonal, a cell product of the spleen, should be mentioned also, which is employed as an intramuscular and intravenous injection for the treatment of chronic constipation, promoting normal intestinal peristalsis.

Messrs. Wyleys, of Coventry, presented a fine series of pharmaceutical preparations which should promote convenience of administration and therapeutic efficiency. An excellent preparation of the sedative principles of opium in solution and known as anodynum furnished an example, and besides there were a glycerol heroin compound; ruscol, an organic compound of bismuth and birch tar; a series of non-alcoholic tinctures and some medicated pastels containing heroin, menthol, eucalyptus, menthol and cocaine, and menthol, ipecacuanha, and cocaine. A neutral syrup of hypophosphites and some excellent ointments (medicinal scarlet red, and rodiol) were the prominent exhibits at the stall of Messrs. W. A. Wharram, Limited, of 115 and 117, Vicar-lane, Leeds; and there were two exhibits of special importance shown by the Saccharin Corporation, Limited, of 10, Arthur-street West, London, E.C.—viz., novocain, a local anæsthetic free from cocaine but having similar anæsthetic properties, and pergenol, an interesting compound of peroxide of hydrogen and boric acid which when dissolved in water gives a neutral solution of hydrogen peroxide. It is antiseptic and oxidant and therefore useful for irrigations. The exhibit included trivalin, a combination of the valerianates of morphia, caffeine, and cocaine, which is said to combine the pain-soothing effect of the alkaloid with the well-known anti-spasmodic action of valerian. Specimens of antiphlogistine, a scientific cataplasm, were exhibited by the Denver Chemical Manufacturing Company, of Bow, London, E. The mass is hygroscopic and antiseptic, serves as an excellent application in inflammatory conditions, and lately it has been used for insect bites, sun-ray dermatitis, and sprains. Messrs. R. Sumner and Co., Limited, of Liverpool, showed a series of interesting drugs, prominence being given to allantoin, which is described as the new cell proliferant. It occurs in the fœtal allantoic fluid, in the urine of pregnant women, in small amounts in normal urine, and in vegetable foods. It can be prepared by oxidising uric acid in alkaline solution in the cold, but the common comfrey plant, which is a classic vulnerary herbal, yields about 0·8 per cent. of allantoin. As a dressing it has been found of service in varicose ulcers and boils, and is said to stimulate epithelial growth and to "clean up" sloughing surfaces in a remarkable way. The exhibit included also a number of tablets, lozenges, dressings, and some surgical and clinical appliances designed by local and other medical men.

(To be continued.)

New Inventions.

CONTINUOUS DROP ETHER BOTTLE FOR THE ADMINISTRATION OF ETHER BY THE OPEN METHOD.

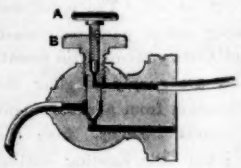
ALTHOUGH there are already on the market several drop bottles for the administration of ether, I have decided to bring out one of my own pattern. The essentials of a good bottle are (1) that when not in use there should be no escape of ether; (2) that it can be carried in a bag without leaking; and (3) that it should give a continuous drop of the required size at equal intervals, these intervals being made

FIG. 1.

longer or shorter at the will of the anæsthetist. The bottle should be large enough to obviate constant refilling, and should be of a convenient shape.

In the bottle illustrated I have endeavoured to meet these requirements. It is made of glass and of a capacity of about 7 ounces (Fig. 1), is conical in shape, and having a wide base is less liable to upset, and as there is no shoulder to the bottle the ether is entirely used up; moreover, the ether surface always covers the outlet. A metal collar is firmly fitted to the neck of the bottle, over which the upper portion is screwed. The upper portion (Fig. 2) consists of a solid bulb having two channels in it—the ether outlet, which projects beyond the bulb as a small tube, and the air inlet. The amount of ether allowed to flow through the outlet is regulated by the screw, B. This screw is so adjusted that a drop of any size may be obtained at desired intervals, and when screwed up it allows no ether to flow. The air inlet is obtained by the flattened screw A, which pierces B and allows air to enter through the air inlet tube projecting to the bottom of the bottle. To use the bottle, the air inlet screw, A, should first be loosened, then the controlling screw, B, regulated.

FIG. 2.

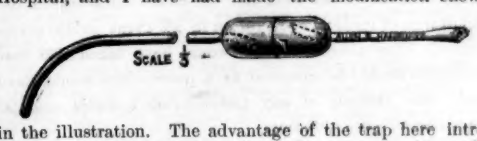


Messrs. Mayer and Meltzer, of Great Portland-street, London, W., have made the bottle for me, and have efficiently carried out my instructions.

L. ERNEST ACOMB, M.R.C.S. Eng., L.R.C.P. Lond.,
Honorary Anæsthetist, Newport and County Hospital.

LARYNGEAL MUCUS CATHETER.

PROBABLY the commonest cause of failure in the treatment of asphyxia neonatorum is the omission to clear the upper airway before performing artificial respiration. The amount of mucus aspirated during the premature respirations which occur in fœtal distress is often surprising. A metal catheter having a slightly bulbous end has been in use for years at Queen Charlotte's Lying-in Hospital, and I have had made the modification shown



in the illustration. The advantage of the trap here introduced is that there is no fear of mucus reaching the operator's mouth, and also that adequate aspiration, followed by insufflation of the lungs, can be performed with a single passage of the catheter.

This little instrument, which will be useful in every midwifery bag, can be obtained from Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W.

Croydon. E. MARSHALL COWELL, M.D. Lond.

THE LANCET.

LONDON: SATURDAY, AUGUST 3, 1912.

The National Insurance Act and a State Medical Service.

DURING the immediate future the medical profession will be preparing to deal with a situation of great importance to the public. In less than six months more than one-quarter, perhaps one-third, of our population will have earned the right to obtain the benefits of a medical service which are so far not arranged for. This situation is fraught for both the public and the medical profession with difficulties, for which neither can be held responsible, save in the remote manner implied in the proverbial adage that every community has the government which it deserves. We do not refer to party politics, and none of the questions at issue between the public and the medical profession at the present moment ought to be allowed to have any political bearing—i.e., any *party* political bearing—at all. The prominent medical persons who are repeating violent party balderdash are neither good Liberals, sound Conservatives, wise practitioners, or useful citizens; they are simply tangling the clues by which honourable extrication from a maze might become possible. And the various troubles, from the mixed result of which has arisen the existing critical position, did not have their commencement in the reading in the House of a Bill for National Insurance; they were of old standing, and the reality of many of them, having been recognised by both the public and the medical profession for so long, we must all take the blame to some extent for recent occurrences. An Act of Parliament, trying to do too much in too short a time, has so far achieved little apparently from the medical point of view. In this situation the Chancellor of the Exchequer may have earned a special right to adverse criticism in that having, like many others, taken no thought as to the increasing difficulty of medico-social problems, he none the less proceeded to formulate drastic proposals dealing with them; but did the medical profession as a whole realise the growing hardships of the general practitioner, the spreading abuses of contract practice, and the coincidental rise in the importance of medical coöperation in all great public movements? They did not, or they would have taken care that the public should be educated to a point which would have made the attitude of any Government towards medical practitioners quite different.

There are now before the medical profession and the public a choice of alternatives sufficiently various to show that, while the Representative Body of the British Medical Association has to support it a remarkably solid expression of opinion as to the correctness of its decision to break off negotiations with the Commissioners, there is no consensus correspondingly large as to what is to be the next course to pursue. The schemes for a public service published by the British Medical Association last June in readiness for the possible breakdown of arrangements with the Government must surely command the approval of most of the constituency, for if they were worked solidly and successfully they would secure for the members of the service all those advantages which are explicitly demanded under the heading of the six cardinal points, whether a capitation system of payment or a system of payment for work done be employed. Either scheme spells freedom for the medical profession from the tyranny of contract practice by the constitution of a union sufficiently powerful to dictate terms—an ideal which will appeal to all medical men who have realised the conditions under which much of this practice has had to be done in the past. The public and the medical profession will receive the undoubted advantages that lie behind cöoperative action whether of payment or service, but those who render the service will do so as free partners to honourable bargains, very different from the contract system under which the medical profession has suffered so notoriously. The two plans are virtually the same as the scheme published in our columns this week, in detailing the foundation of a coöperative method of working the medical benefits of the Act by the practitioners of the Wandsworth area, but it will be seen that in the Wandsworth scheme the fees to be charged for services, additional to those covered by the subscription, are set down. The money demanded under the proposals of the British Medical Association, over and above the sum proposed to be found under the clauses of the National Insurance Act to provide medical benefits, is in the aggregate a large one, but the burden is distributed among many millions. The terms offered by the Commissioners are inadequate, if only because the work to be done under the new conditions of contract practice will be enormously increased. A service managed by the medical profession, if it can be established, should secure thorough and scientific treatment to a degree that seems not to have been contemplated by the Act. The provisions of the schemes of the British Medical Association are known to have been arrived at to a certain extent by compromise, individual variations of outlook having been subordinated to uniformity. Further modifications may well have to be made, and the public must be reassured in every way against the loudly expressed fear that medical men desire to control medical service solely in their own interest.

Among the alternatives to the schemes of the British Medical Association are any proposals that the Commissioners may make under the Regulations securing concessions to the medical profession. These proposals, if they come, will probably take the form of a more generous money payment and a more independent position for medical men—for we do not anticipate any yielding to the demand for the £2 income limit for beneficiaries. But the Commissioners will find the difficulty of the situation increased by the fact that medical men are now, so many of them, convinced that by standing outside the Act

they can provide the public with good medical service on terms satisfactory to themselves. It is therefore suggested that the Government, finding this to be the case, might erect a State service to meet the want created by the Act; and some members of the medical profession, going further, are prepared to welcome such a general nationalisation of medicine as is contemplated in plans like that which Dr. R. R. RENTOUL submitted to the Section of Medical Sociology of the British Medical Association last week. We may say at once that we do not consider that the country is ready for a complete National or State medical service now, and we do not think that it soon will be. The idea has long been in the air; it has its obvious attractions and equally obvious objections. The initiation of a society to consider the possibility of such a transformation of a learned profession into a State service has taken place, and we welcome the movement, for it is well that the whole matter should be earnestly debated. But our belief is that the more it is debated the more will it be found impossible under a State service to keep the same high ideals of education before us, to be as ready as we now are to seize upon all that appears to promise scientific progress, and to maintain the private relations that should exist between practitioner and patient. But in the course of considering these things it is inevitable that many men should obtain a clearer view than they have at present of the sociology of medicine, and valuable reforms in detail might ensue. A State service of medical men to work the National Insurance Act would be a very different thing from a complete transformation of the whole of the medical profession into a State service; but it would none the less mean an enormous revolution in private practice if the complete service were created at once.

Practical Eugenics.

THE First International Eugenics Congress, which met last week in London under the presidency of Major LEONARD DARWIN, the distinguished bearer of an illustrious name, gave striking evidence of the remarkable manner in which the doctrines promulgated by the late Sir FRANCIS GALTON have already won acceptance in the scientific world. When it is borne in mind that the science of eugenics has been so recently constituted that its very name has hardly yet found its way into the dictionaries, it will certainly be recognised as profoundly significant that it should have been possible to make this new-born branch of knowledge the occasion for bringing together this remarkable gathering of eminent workers of different nationalities and labouring in different fields of scientific research. Even when all due allowance has been made for the skill and energy displayed by the promoters of the Congress—and by general admission the meeting was a triumph of organisation—its obvious success would hardly have been possible were it not that the eugenic idea possesses a somewhat special power of appeal, partly, no doubt, by reason of its inherent validity, but probably still more because it responds to an urgent need in the intellectual condition of the time. It would, in fact, be hard to dispute that many circumstances in recent history, and many tendencies apparent in contemporary civilisation, and particularly in the civilisation of countries organised on the democratic basis, have done much to shake the buoyant optimism of an earlier generation, and have inspired some salutary doubts as to the wisdom of political principles that find their sanction more in emotionalism than in knowledge. In a large measure the social legislation, which, by its unforeseen and undesired consequences, has produced a spirit of dissatisfaction in the thinking classes of the community, has utilised forces placed at its disposal by scientific discovery: science has furnished the materials for the prescriptions of the political quack. It is fitting, therefore, that science should also admit some degree of responsibility for these evil results, and should, in extenuation, point out the way to their removal. And it is largely for this reason, because it promises to correct by the application of a scientific spirit the errors and shortcomings of empirical politics, that the eugenics creed has found such ready hearing and such prompt acceptance.

It is not, then, with questions of purely theoretical interest that eugenics has mainly to do; on the contrary, it aims at furnishing immediate practical guidance in moulding the institutions of society. And this ambitious aim is very clearly and definitely advanced in the interesting address with which the President opened the proceedings of the Congress. The object of the eugenist, as Major DARWIN emphatically urged, is not merely to study the laws of heredity, but also to apply such knowledge of these laws as is already to hand to the regulation of human life. Our knowledge of the intricate questions thus introduced is doubtless fragmentary and uncertain, but the fullest recognition of our ignorance, though it warns us of the danger of hasty and unconsidered action, gives no warrant whatever for an attitude of fatalistic abstention. But in truth, of course, such an attitude is wholly impossible, for the very existence of a social organisation, however primitive and rudimentary, implies at once the active interference of the collective consciousness limiting the free play of the individual's aptitude and modifying the influence of the environment. It is idle, then, to deprecate the proposals of the eugenist on the score that we do not yet know enough of the laws of heredity to justify us in interfering with the natural course of events. Whether we like it or not, we are always so interfering, and to refuse to be guided by such scanty knowledge as we have can only tend to increase the chance that our intervention will be wholly mischievous. And this is, in fact, just what is alleged by the eugenist critics of our modern civilisation. The history of the world, they remind us, is not a tale of continuous and uninterrupted advance. Amongst the countless experiments of Nature many have proved to be failures. New species have often appeared on the earth merely, it would seem, to decay and become extinct. And in the history of the human race civilisations have arisen, flourished, and died away without transmitting any of the cultural gains which they had achieved. Nothing warrants the belief that the same fate may not overtake the Western civilisation which dominates the world to-day, and there are even some ominous indications that its progress has already been arrested, if, indeed, it is not threatened by

an actual movement of retrogression. The causes that bring about the decay of civilisation are, no doubt, diverse and many of them are obscure, but there is, at all events, some ground for considering that one of the potent influences menacing the progress of European culture is the unrestricted propagation of inferior stocks. Under civilised conditions it is impossible for natural selection to operate as it has done in ruder ages by continually weeding out the unfit in body and mind and so raising steadily the aptitudes of the breed. Our interference with that cruel but effectual method of Nature has thus created an artificial environment which favours the unfit at the expense of the fit, or, perhaps it would be more correct to say, it has so modified the conditions of life that the diseased in body and the weak in mind are better adapted to this environment, or, biologically speaking, more fit, and will tend, therefore, to replace the superior stock which by reason of their superiority are unfit. If this view of the tendencies in our modern civilisations is correct—and it can hardly be questioned that it contains at least a large amount of truth—it is sufficiently evident that our social methods will have to be modified, and that speedily, unless civilisation is to be destroyed by its own by-products. This is the root principle of eugenics.

In their diagnosis of the dangers incident to the fostering of inferior stock by the social methods actually in vogue, and in their insistence on the need of immediate action to guard against these dangers, eugenists are fairly agreed; and they are likely to find their views very generally accepted by persons who are competent to judge of such matters. But there will be more difficulty when it comes to discussing the practical measures which are to promote the cause of race betterment. And in this connexion the propagandists of the movement would be well advised to take heed of the judicious warning of Mr. BALFOUR, and to beware of the cranks and the faddists who find an irresistible fascination in just such questions as fall within the province of eugenics, especially while they still retain the glamour of novelty. The conditions of the moment are peculiarly favourable to the acceptance by public opinion of some methods of eugenic reform, particularly in the direction of segregating the mentally defective and limiting the propagation of diseases that destroy the vitality of the stock. And nothing is more likely to injure the prospect of such salutary measures being carried into effect than that their advocacy should be associated with reckless proposals which, under the pretence of being the legitimate conclusions of science, are but hasty generalisations which would suggest that the only and sufficient test of truth is that it should *épater le bourgeois*. It is one of the many merits of the International Congress just held that it has avoided this pitfall, and that in all its discussions relatively little was heard of the praises of the lethal chamber and the human stud-farm. It is to be hoped that the movement will continue to be animated by this spirit of sanity, and that its promoters will recognise the necessity of excluding from the programme of practical eugenics methods that violate feelings and repress impulses which are the highest product of human evolution.

Annotations.

"Ne quid nimis."

THE ACADEMIC IDEAL IN MEDICAL EDUCATION.

THE publication in June, 1910, by the Carnegie Foundation for the Advancement of Teaching of its "Report on Medical Education in the United States and Canada," was received in those countries with very mingled feelings, for it proved a serious impeachment of the methods and conditions present in a large number of the Transatlantic medical schools. While a few of the more enlightened among them accepted its chastising influence in a proper spirit, and, acknowledging their defects, set to work to remedy them as far as possible, the report aroused in many quarters considerable resentment and even vilification. Impartial outside students of the subject, however, at once recognised its statesmanlike qualities and broad and proportional view. Hence it is no matter for wonder that the work has been continued in a study of medical education in leading European nations.[1] We in this country are less hypersensitive to adverse criticism, and we naturally turn with interest to see how the current system of medical teaching in Great Britain strikes a skilled and disinterested observer. In an introduction Dr. H. S. Pritchett says that the teacher who examines the two reports upon American and European conditions will realise that medical education is an educational rather than a professional problem. "The education of a physician," he says, "is primarily an educational, not a medical question, just as the training of an engineer is primarily an educational question, not an engineering question. This does not mean that the physician and the engineer must not recognise finally the point of view of medical practice and of engineering practice respectively, but it does mean that though the content be in one case medical, in the other technical, the methods employed in training physician or engineer involve educational procedures and educational skill." A review of the medical schools in the countries under consideration (the German Empire, Austria, France, England, and Scotland), indicates the absolute dependence of professional teaching in medicine upon the general educational system of the country itself. No one, it is stated, who faces the evidence brought together in these two reports can doubt the conclusion that in those countries in which the elementary and secondary school system is weak, the general level of professional education is low. Of the soundness of this conclusion there can be no more striking example than is furnished by a comparison between Germany on the one hand and the United States and England on the other. For the general high level of German professional training the German secondary school is declared to be mainly responsible. The medical curriculum is already so overcrowded that it can contain no more, yet medical science is continually widening its field. The consequence is a growing disposition to neglect the great underlying fundamental studies. Every consideration points, therefore, to the conclusion that the elementary underlying sciences must be learnt by the student of medicine before he enrols himself in the professional school. Further, not only must chemistry, biology, and physics be taught by those who are primarily teachers and who give their whole time to teaching and research, but the more definitely medical sciences of anatomy, physiology, pathology, and bacteriology must also be taught by

[1] Medical Education in Europe. A Report to the Carnegie Foundation for the Advancement of Teaching. By Abraham Flexner. With an Introduction by Henry S. Pritchett, President of the Foundation. Bulletin No. 6. New York City. 576, Fifth Avenue. 1912. Pp. 357.

specialists. So much at least appears theoretically to be generally conceded. Here Germany is in the forefront. But it is not so generally realised that a clinical teacher also should be one who devotes his life to teaching and research; yet on this point insistence is made, and again Germany is pointed to as the only country in which this principle has hitherto found recognition. With the more general acceptation of the view that medical education is *education*, and not a professional incident, the conception of the clinical teacher must undergo change. The teaching of clinical medicine and surgery will then cease to be a side issue in the life of a busy practitioner, and will propose to itself the same objects, and conform to the same standards and ideals, as the teaching of any other subject of equal importance. But while Germany is strong in the subject of preliminary education and in the specialising of teachers, including clinical teachers, the strength of the English method is found to be in "a practical form of examination administered on a large scale, fair to the candidate, and excluding the manifestly unfit and unprepared." Special commendation in this respect is given by Mr. Flexner to the examinations of the London Conjoint Board, which are held up as a model for America. Exception is taken to the mischievous misconception which opposes scientific and clinical medicine to each other, regarding laboratory methods as scientific, clinical study as empirical. "Nothing," says Mr. Flexner, "could be more illogical. Science is indifferent as to where or how observations are made; it is concerned only with the vigour, precision, and consistency of the observation." The essential difference between modern medicine and its predecessors is stated to lie, not in a difference between modern laboratory methods and old-time bedside methods, or in the fact that our predecessors never observed rigorously, while we always do so, for such is not the case; but in the fact that formerly unprejudiced and critical scrutiny was occasional and precarious, liable to sudden irruptions of fancy or mysticism; while in modern scientific medicine such scrutiny is deliberate, conscious, and as consistent as our mental powers can make it. The historical chapter of Mr. Flexner's report is a truly philosophical chapter in the history of medicine, of which we do not try to give more than a bird's-eye view. He points out one superiority of the German system of medical education, in that it permits and even encourages the student to seek larger or more congenial opportunities, by moving at intervals from place to place. In the British and French systems, however, every effort is made to attach the student permanently to one school for all the elements of his education alike, irrespective of the fact that facilities may differ materially in different subjects at different places. The chapter on clinical instruction in Great Britain is one of considerable penetration, though we are not prepared to endorse his conclusions. The burden of Mr. Flexner's criticism is that the laboratories and the clinics represent different and incongreous stages of development. The laboratories are educational institutions, the heads of which are called to their chairs for merit; but in the hospitals, he considers, educational criteria do not govern appointments. "A medical school," he says, "seeking an anatomist or physiologist goes into the market and procures the best teacher and investigator it can afford. ..... But for physicians and surgeons the hospitals engage in no such competition; they are obviously seeking to build up not the best staff, nor the most productive staff, but just a good congenial staff—a staff composed of men who have grown up together in the same condition, who like one another, who can coöperate in works of charity, and in professional matters lead up to one another's hand. They deliberately inbreed." We do not recognise this as a fair or accurate description of the organisation and growth of the medical staff of a British hospital at the present day, and we think that Mr. Flexner must have received bad counsel at this point. But his contrast of the positions of the great physiologist and the successful physician is pertinent, and no doubt the differences observed between German and English ideas are to some extent real. The medical profession in Great Britain, he points out, "ripens in the consultant who represents the prosperous culmination of a successful professional career." The end is distinctly non-academic, and in this it is at once marked off from the ideal of the German clinical and the English laboratory teacher. The German clinician and the English physiologist desire primarily scientific repute. Aside from the spontaneous scientific interest, which is, as a matter of fact, almost invariably his controlling motive, even worldly gratification hangs on unworldly distinction. The English medical man reverses the relationship, so that for him scientific distinction is a becoming decoration; it is not the breath of his nostrils. The conclusions are too sweeping, but there is justice in the criticism. But Mr. Flexner admits that in respect of the medical student nowhere else in the world are conditions so favourable. Clinical education in England he finds primarily practical. The student learns the principles of medicine concurrently with the upbuilding of a veritable sense of experience in the wards, and he acquires the art of medicine by increasingly intimate and responsible participation in the ministrations of the physician and surgeon. The British method of clerking and dressing is stated to fill every requirement of sound and thorough teaching. In all that pertains to the relation of the student to the hospital Mr. Flexner considers that the English model deserves to be universally copied. Its curable defects are that, as compared with the German university department, the English medical school is unproductive, and the English medical student is handled like a schoolboy learning a trade. Both conditions Mr. Flexner considers will be remedied by one course of action; for when teachers of medicine are university professors they will insist on a higher grade of preliminary training. Thereupon the student can be trusted with large individual freedom, can be tempted by genuine opportunities to seek his own larger development.

RUSTY HOT WATER.

MOST people are familiar with the trouble and discomfort which may be caused by a domestic hot water-supply becoming "rusty." In some towns, as in Dublin since the introduction of the Vartry water, it has on this account become necessary to discard both iron boilers and iron pipes for hot-water services owing to the destructive action of the water on the iron. An excellent account of the causation and prevention of this "red water plague" has lately been given by Mr. G. C. Whipple, professor of sanitary engineering at Harvard University. The different conditions which favour and retard rustiness are numerous, and their explanation is often obscure. Broadly speaking, however, the water most liable to produce corrosion is one in which hydrogen ions are increased on account of the great purity of the water, the presence of acid or deficiency in alkalinity, or other causes, and in which also dissolved oxygen is abundant. Mr. Whipple finds that very soft ground waters, soft peaty surface waters, and waters in which the chlorides or the free carbonic acid are high as compared with the alkalinity, are the principal offenders. Exceptionally a hard water, in which the hardness is due to sulphates of calcium and magnesium, may be at fault, while it is clear that in some cases where the water-supply has been treated by a sulphate of alumina coagulating process a

serious degree of rustiness has been caused, even when the water has not been so over-dosed with alum as to render it acid. He concludes that a very soft public supply should, as a rule, be hardened by the addition of small quantities of lime, say 10 to 15 parts per 1,000,000—a practice which, partly on account of the risks of lead poisoning, has long been followed in the case of several public water-supplies of moorland origin in this country. Given a supply capable of causing rustiness, the degree of the nuisance largely depends on the temperature at which the water in the circulating hot-water system is maintained and the rate at which it is used. Rapid circulation and a temperature near to boiling point favour the formation of iron rust, and this is also more marked in hot-water systems which are under high pressure. The important part played by electrolytic action is generally recognised, and marked differences have been noted between different qualities of iron and steel pipes in their ability to resist corrosion. It is generally considered that "high quality" and uniformity in the composition of the metal of pipes and boilers should be insisted upon, but there seems to be considerable uncertainty as to the nature of the specification to be made and the tests to be used to see that the specification is complied with. There is no doubt that in the case of some public supplies hot-water installations which are free from all iron or steel will in the long run prove the most economical. We should add perhaps that the "red water" trouble to which we allude is to be distinguished from the occasional rustiness that is often observed merely in the first flow of water drawn from a hot-water tap or a gas heater. This may be observed on any water-supply, and is apparently due to local electrolytic action at the junctions of different metals at places where the temperature of the water is high.

EPIPHYSITIS OF THE OS CALCIS.

IN the *New York Medical Journal* of May 18th Dr. James Warren Sever, of Boston, has called attention to a painful condition of the heel in children which he has found not uncommon—epiphysitis of the os calcis. It generally occurs in children who are over weight for their years, are physically active, and have strong muscles. The child is generally seen on account of a slight persistent limp, with disinclination to complete the full step in walking. Tenderness, which has persisted for several weeks or months without change, is complained of about the posterior aspect of the heel low down. The child has usually worn a low shoe or sandal. There may or may not be a history of injury. The foot may be slightly pronated. On examination an area tender on pressure is found over the posterior portion of the os calcis, deeply situated in front of the tendo Achillis on either side. There is moderate thickening about the whole of the posterior portion of the os calcis, with diminution of the hollows on either side of the tendo Achillis. The movements of the foot are slightly limited, especially in full dorsal flexion, and any movement which tends to put a strain on the tendo Achillis is painful. There are pain and tenderness on weight-bearing when the heel is put on the floor, but less when walking on the toes with the heels elevated. The condition resembles somewhat inflammation of the bursa between the tendo Achillis and the os calcis, but is more extensive and more deeply situated. Another condition to be excluded is tenosynovitis of the tendo Achillis. This is distinguished by the presence of tendon crepitus and the pain referred to the tendon itself. Irritation of the bursa between the tendo Achillis and the skin of the heel from shoe pressure has also to be differentiated. Skiagraphy will usually settle the question at once, but even without this the diagnosis is fairly obvious. Whenever ossification of the epiphysis of the os calcis is sufficiently developed there will be seen on comparing plates of the two feet an enlargement of the affected epiphysis both in length and thickness. There is also considerable cloudiness along the epiphyseal line, suggesting a deposit of new bone, and often partial obliteration of this line. A similar condition has been described in the tubercle of the tibia and termed Schlatter's disease. The treatment is usually simple. There are two indications—to relieve the strain on the tendo Achillis (which is attached to part of the epiphysis) and to prevent undue weight-bearing on the heel. For the former purpose the heel of the shoe is raised one-quarter to half an inch. Strapping with vertical strips of narrow adhesive plaster, extending around the heel and well up the leg on either side, gives great relief and support. If there is much pronation an eighth of an inch pad is put on the inner edge of the heel to tip the foot out slightly. To prevent pounding of the heel in walking a rubber heel is used, and a pad of sponge rubber is put inside the heel of the shoe. Other procedures of use are hot and cold douches, electric heat baths, and rest. The duration of the condition varies greatly. Complete cure may be achieved in a few weeks, but more often the disease lasts several months, and may recur after over-use or injury at any time before puberty. Ultimately permanent cure is attained on fusion of the epiphysis with the os calcis.

MUNICIPAL DISPENSARIES AND TUBERCULIN.

IN view of the administration of "sanatorium benefits," which is now a matter of immediate concern, the paper which we publish in another column in abbreviated form, and which was communicated by Dr. Mearns Fraser and Dr. Hilda Clark to the Congress of the Sanitary Institute at York this week, is of considerable interest. It deals with the curative measures for tuberculosis inaugurated by the Portsmouth town council. The general organisation seems to have been laid down on careful and sound lines, and stress is laid on the importance of establishing every scheme of this nature on a broad basis, an excellent sentiment to promulgate before a lay audience. A dispensary for administering tuberculin treatment, which is the definition of the Portsmouth Dispensary, is certainly not the only weapon necessary in attacking successfully the tuberculosis problem. If that portion of the National Insurance scheme which is intended to benefit tuberculous patients is to succeed, in addition to dispensaries, hospitals, sanatoriums, home supervision, and suitable provision for children, among other things, must be provided. Further, in any municipal or other scheme for combating tuberculosis the coöperation of the general practitioner is essential; without such aid the dispensaries and allied measures will lose much of their value. Dr. Fraser and Dr. Clark give details of the treatment by tuberculin, and the tone they adopt is a moderate one. We would here urge, however, that reliance on the value of tuberculin as a therapeutic agent must not be too profound. Undoubtedly, in certain cases it is of great value, but when, as is shown in Table VI. of the article, 100 per cent. of "arrested" cases is claimed, those who have had extended experience in pulmonary tuberculosis may well pause and question the means of diagnosis which have been adopted. Such a result is only obtained in those cases in which the signs and symptoms are indefinite but there is a positive reaction to tuberculin. Numerous competent observers have shown that tuberculin as a diagnostic reagent may be fallacious, and therefore the apparent success obtained cannot be taken as the true indication of the therapeutical powers of the remedy. Probably other

municipalities will follow the example set by Portsmouth, and whilst such efforts are worthy of encouragement it is of the utmost importance that the organisation should be complete, and that reliance should not be based on one method of treatment only.

OLD TOWNS AND NEW NEEDS.

"Old Towns and New Needs" and the "Town Extension Plan" are two lectures which were given in the early part of this year under the Warburton Trust, the first by Mr. Paul Waterhouse, who is responsible for the erection of several buildings in Manchester, and the second by Mr. Raymond Unwin. Both lectures should appeal to those who have at heart the improvement of our towns. Mr. Waterhouse gives six axioms on old towns and new needs, of which we quote four. Nothing in town-planning is impossible. Nothing is too expensive; it will be more expensive to-morrow. A hundred guineas spent on advice are better than £10,000 paid out in error. Ugliness is the most expensive luxury and beauty is the cheapest of necessities. Two excellent lectures, which we commend to all who are interested in the subjects with which they deal.

RETINAL HÆMORRHAGE IN PURPURA HÆMORRHAGICA.

RETINAL hæmorrhage in purpura hæmorrhagica is rare. In the *Gazette Hebdomadaire des Science Médicales de Bordeaux* Dr. Et. Ginestous has reported the following case. A married woman, aged 64 years, came to hospital on March 13th, 1912, complaining of loss of vision, particularly in the left eye. She had had no children or miscarriages. After the least injury she suffered from severe epistaxis. In May, 1910, after great excitement ecchymotic patches appeared, first on the legs, then on all parts of the body. These spots disappeared in 20 days, but were almost immediately followed by others, and since that time she never remained more than a fortnight free from them. In July abundant epistaxis repeatedly occurred. During the last four months the epistaxis had ceased, but was replaced by hæmorrhage from the gums, at first slight, then more abundant. In January, 1912, melæna occurred. Under calcium chloride slight improvement took place, but on March 10th loss of vision was noticed. On examination vision in the right eye was found reduced to 1/3 and in the left to 1/50. The refraction was normal. The ophthalmoscope showed a slight hæmorrhage on the outside of the right disc and encroaching on it; the disc itself was pale. In the left eye there were more extensive lesions; above, below, and inside the disc there were hæmorrhages. On the following days fresh retinal hæmorrhages occurred, so that the right disc became surrounded with a ring of blood and another hæmorrhage invaded the upper part of the left disc. The patient looked anæmic and her whole body was covered with ecchymoses of the size of a lentil, varying in colour according to the stage of their evolution. The gums were congested and jagged and showed a band of vinous colour along their free edge. They bled on the slightest touch. A systolic murmur was heard at the apex and was propagated into the axilla. With Pachon's sphygmometer a maximum blood pressure of 17 and a minimum of 9 were found. The pulse was 90. The other organs were normal. The urine contained a trace of albumin, but neither red blood corpuscles nor casts. Blood examination showed red corpuscles 3,317,000 and white 11,160. A differential count gave polynuclear neutrophiles 79 per cent., myelocyte neutrophiles 0·33, lymphocytes 17, mononuclears 2·5, and eosinophiles 0·30. Retinal hæmorrhage in purpura hæmorrhagica is of great significance, and in the published cases has been precursory of death. Recovery has occurred only in young patients.

THE Congress and Exhibition of the Royal Sanitary Institute was opened at York on July 29th by the Archbishop of York, President of the Institute. In his inaugural address the Archbishop dwelt on the sanitary progress of the last 50 years, and expressed a hope that the clergy would take their place as teachers, guides, and campaigners in extending that progress. He referred to the housing problem, approved the Bill for dealing with the mentally deficient, and declared himself in favour of amendment of the marriage laws, so as to declare marriages null and void within a specified time, where material facts had been withheld, disclosing insanity, epilepsy, or venereal disease.

WE are asked to announce that the library and offices of the Royal Society of Medicine will be closed from Thursday, August 1st, to Saturday, August 31st, inclusive.

WE regret to record the death last week of Mr. Edward Stanmore Bishop, F.R.C.S. Eng., of Manchester, honorary surgeon to the Ancoats Hospital. An obituary notice of Mr. Bishop will appear in a later issue.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN (UNIVERSITY OF LONDON).—The following appointments are announced:—Mr. F. Wood Jones, M.B., B.S., D.Sc. Lond., demonstrator in anatomy, St. Thomas's Hospital Medical School, to be lecturer and head of the department of anatomy, in succession to Mr. F. G. Parsons, F.R.C.S. Eng., who has resigned; Mr. J. A. Gardner, M.A. Oxon., F.I.C., to be lecturer in organic chemistry and head of the department of chemistry, in succession to Miss C. Evans, D.Sc., who has resigned; Miss Widdows, B.Sc., to be lecturer in inorganic chemistry; Miss M. D. Waller, B.Sc., to be demonstrator in physics. The St. Dunstan's medical exhibition, value £60, for three or five years, has been awarded to Miss A. M. Kerr, of the Clapham High School. The school scholarship, value £30, has been awarded to Miss E. M. Scarborough, of Trinity Hall, Southport. The Dr. Edith Peachey Phipson post-graduate scholarship, value £40, has been awarded to Miss C. L. Houlton, M.B., B.S. Lond.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—The following scholarships, medals, prizes, and certificates were awarded at this school during 1911–12:—Inorganic chemistry: Prize, D. A. R. Aufranc; certificates, R. E. S. Webb, H. W. Lewis, and A. K. Ince Jones. Organic chemistry: Prizes, D. W. J. Andrews and W. H. Lloyd (equal); certificate, D. C. Ogilvie. Physics: Prize, D. A. R. Aufranc; certificates, R. E. S. Webb, H. W. Lewis, and G. D. Moore. Biology: Prize, H. W. Lewis; certificates, J. R. S. Bowker, C. J. L. Wells, A. Selby Green, and G. Hoffmeister. Practical pharmacy: Prize, A. B. Hacking. Histology: Prize, W. T. Warwick. Embryology: Prize, L. G. Phillips; certificate, R. H. Fleming. Physiology: Prize, L. G. Phillips; certificates, S. W. M. Jones, E. R. Lovell, R. H Fleming, A. T. Dally, and A. Lawrey. Practical anatomy: Prize, S. W. M. Jones; certificate, E. R. Lovell. Anatomy: Prize, S. W. M. Jones. Bacteriology: Prize, F. H. Kelly; certificates, G. E. Beaumont and A. J. Juett. Pathology: Prize, A. O. Gray; certificates, O. C. Link and S. H. Keys. Forensic medicine and public health: Prize, A. O. Gray. Pharmacology: Prize, R. H. Fleming; certificates, C. J. B. Way and L. G. Phillips. Practical midwifery: Prize, A. O. Gray; certificate, G. E. Beaumont. Practical surgery: Prize, A. O. Gray; certificate, R. J. Harley Mason. Midwifery: Prize, G. E. Beaumont; certificate, J. P. Shaw. Surgery: Prize, C. Helm; certificate, A. O. Gray. Medicine: Prize, A. O. Gray; certificate, S. H. Keys. Second year's exhibition, S. W. M. Jones. Hetley clinical prize, T. L. Hardy and C. Helm (equal). Freeman scholarship, L. C. Rivett. Lyell medal and scholarship and first Broderip scholarship, T. L. Hardy. Second Broderip scholarship, E. A. Wilson and H. J. S. Shields (equal).

OBSERVATIONS ON THE NEURON.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN, WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

III.[1]

Inter-neural (Synaptic) Junctions.

AXON terminals other than the peripheral are brought into functional relation either with the dendrites or the neurosomes of other neurons.

Axo-dendritic synapse.—There are probably many different kinds of axo-dendritic junctions. The usual one is that which Ramon y Cajal designates the *terminal*. In it the mittors are brought into relation with terminal dendri-ceptors. (Fig. 28, upper portion.) Sometimes, so it is contended, the

FIG. 27. FIG. 28.

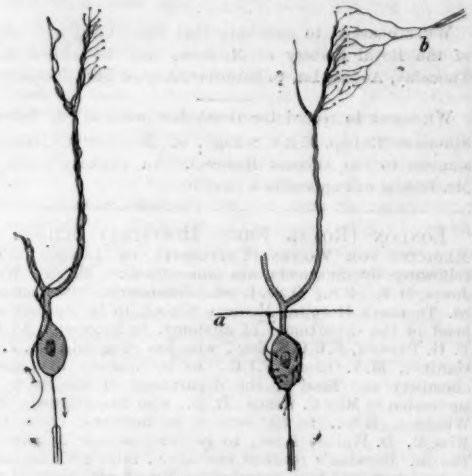


FIG. 27.—Purkinje cell showing climbing fibre (diagrammatic).

FIG. 28.—Purkinje cell. *a*, Axon of basket cell sending a branch to ramify about the body and the initial portion of the axon of a Purkinje cell. *b*, Axon (proceeding from the pons?) ramifying about the ultimate dendrites (diagrammatic).

area of functional contact between axi-fibrils and dendrites is not confined to points, but may involve a considerable surface.

A less frequent mode of junction is the *initial*. As an example we may take the climbing fibrils on the dendrites of the Purkinje cell. (Fig. 27.) These fibrils (derived from axons proceeding from pontine nuclei ?) follow each individual dendrite from their origin onwards. Similar climbing fibres are met with in Deiters's nucleus and the red nucleus. In both these cases, however, the climbing fibrils spread over the neurosomes as well as along the dendrites. Cajal evidently holds that the climbing fibres come into functional relation with their related neurons along their entire surface of contact. We must not, however, lose sight of the possibility of their being provided with definite mittors placed in functional relation with neuro-ceptors.

Axo-somatic synapse.—In this case the axi-fibrils may form a dense peri-somatic plexus constituting a "nest" or "basket." (Fig. 28, lower portion.) A single axon from a cerebellar "basket cell" may in this way provide "baskets" for a number of Purkinje's cells.

It will be observed that the Purkinje cell exhibits all three forms of synaptic junction. (Figs. 27 and 28.) Thus, in addition to the initial axo-dendritic junction by climbing fibrils and the axo-somatic junction by basket fibrils, a *terminal* form of axo-dendritic junction is effected by means of axi-fibrils proceeding from the small granule cells. Nothing better shows how much we have to learn concerning the nature of neuronic interaction than our absolute ignorance of the individual significance of each of these three varieties of synaptic junction. It is noticeable that each form of junction which the Purkinje cell makes is with a different order of neuron.

A form of inter-neural junction deserving special mention is that between certain neurons of the autonomic system and peripheral sensory neurons. Cajal gives several drawings showing the arborisation of fine non-medullated fibres about the neurosome and naked stalk[2] of the peripheral sensory neuron (e.g., in the posterior root-ganglions, the Gasserian ganglion, and the ganglion of the vagus). He assumes that these sympathetic fibrils form synapses with the neurosome and stalk of the peripheral sensory neuron.

Have we here an explanation of the "anti-dromal" property of the sensory nerves? Bayliss has shown that effects similar to those produced by stimulating the distal end of a divided sympathetic nerve may be produced by stimulating the distal ends of certain sensory nerves, which are thus capable of bringing about efferent as well as afferent effects. One is led to ask whether the sensory fibre, besides containing afferent fibrils, may not also contain efferent autonomic fibrils. It need hardly be said that such a view implies the existence of separate intra-neural paths.

The Polarisation of Nerve-impulses within the Neuron.

Leaving out of account the peripheral sensory neurons, most of the neurons in man are furnished with a short dendritic arborisation and a single axon. It is now generally admitted that in all such neurons the impulse flows from the dendrites through the neurosome to the axon —i.e., it is axi-petal. The old view that the cell-body "discharges nerve force," much as an electric battery discharges electricity, is, as we have seen, untenable. There is, indeed, evidence that the impulse need not traverse the neurosome at all. When the latter is situated between the dendrites and the axon it must perforce do so, but it is not always so situated.

Until 1891 Cajal held that impulses flowing along the dendrites always polarised towards the neurosome—that they were necessarily *celluli-petal*. Up to that date the only form of neuron he had studied from the point of view of polarisation was the multipolar variety. The study of neurons in their philogenic and ontogenic aspects reveals forms suggesting a different conclusion. Three main types are met with:—

1. A smooth pyriform cell furnished with a single axon process. This in its initial portion gives off afferent (dendritic) branches indistinguishable in appearance from collaterals, while in its more distal portions it gives off efferent collaterals. (Fig. 29.) To this unipolar type belong the majority of neurons among invertebrata (worms,

FIG. 29. FIG. 30. FIG. 31.

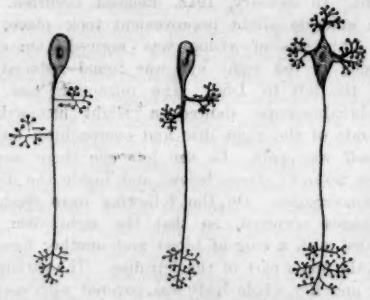


FIG. 29.—Primitive unipolar neuron. The single process and its collaterals have the characteristic appearance of an axon. The collaterals perform the function of dendrites. (The arrows are not clearly shown in this or the next figure.)

FIG. 30.—Unipolar neuron. The single process gives off near its origin branches presenting the characteristic appearance of dendrites.

FIG. 31.—Neuron in which the dendrite trunks and the axon arise separately from the neurosome.

[1] Articles I. and II. were published in THE LANCET of July 13th (p. 102) and 20th (p. 170) respectively.

[2] Cajal gives other instances of axons which are receptive at their origin—e.g., the Purkinje cell and the *cellule à crosse*. We therefore seem justified in speaking of axi-ceptors as well as of dendri-ceptors and somato-ceptors.

molluscs, insects). This type is also met with in the embryo of birds and mammals.

2. Small pyriform unipolar cells, the axons of which give off near their origin branches having the characteristic appearance of dendrites. (Fig. 30.) This type abounds in the central nervous system of fishes and batrachians, and is also met with in the embryo of birds and mammals.

3. That form in which the dendrite trunks, on the one hand, and the axon on the other, spring from different parts of the neurosome. (Fig. 31.) This type develops from the preceding by the gradual approximation of the dendrite processes to the neurosome.

Now Cajal contends that in unipolar neurons, in which both afferent and efferent branches come off from the single process, the impulses are always axi-petal—i.e., that they pass direct from the afferent branch to the efferent branch, without traversing the neurosome. Were it necessary for all afferent impulses to pass up the single stem to the neurosome, they would need to descend the same stem again—i.e., they would have to travel along it twice and in reverse directions. One thing is certain: if this occurs there must be separate intra-axonic routes for the ascending and descending impulses.

The same principle applies to certain bipolar neurons—e.g., the *cellule à crosse* (see Fig. 32). In this the axon comes from a dendrite: the neurosome gives off a shorter and a longer dendrite; from the latter the axon issues. Now while in such a neuron the impulse generated in the shorter dendrite has perforce to traverse the neurosome in order to reach the axon, that originating in the longer dendrite and its divisions takes the shortest route to the axon, avoiding the neurosome. Similarly in regard to the small cerebellar "granules" in which the axon is usually given off from a dendrite. Other similar instances exist in man.

FIG. 32.

Bipolar cell (*cellule à crosse*) from optic lobe of sparrow (Cajal). Each process is a dendrite trunk. From the upper, larger one, the axon is given off.

Cajal further maintains that in the case of the unipolar peripheral sensory neuron the impulse passes directly from the peripheral to the central branch, without passing up the common stem to the neurosome and down again.

The law of polarisation within the neuron runs thus: "All the impulses received by the dendrites and the neurosome are polarised towards the axon" (Cajal). So far as nerve-impulses are concerned the neurosome is a mere conductor, and that the neurosome is not even necessary for their conduction, far less for their generation, is conclusively proved by the fact that Bethe has been able to obtain reflex effects after its removal. This law carries with it certain important corollaries. If an impulse starting in one part of a neuron-process does not necessarily diffuse itself through the entire neuron, but is rigidly polarised towards the axon, it must obviously be held by some means to a definite route within the neuron. Have we not here a strong argument in favour of the existence of separate intra-neural paths?

The assumption that impulses can thus pass along definite intra-neural paths, be they fibrillary or not, without being diffused throughout the entire neuron, implies that an impulse passing through one neuron has no tendency to diffuse to other neurons in contact with it, and therefore that neurons have no need to be insulated. Cajal, however, assumes such a need, and in this he appears to me to be inconsistent. This diffusion theory has long been taken for granted, yet I do not know of any evidence in support of it. I have asked physiologists for proof that an impulse traversing a naked nerve-fibre tends to pass to a similar nerve-fibre in contact with it. They reply that this cannot be proved by experiment, because it is impossible to obtain nerve-fibres wholly devoid of any kind of sheath. But if it could be proved experimentally that the impulse did actually pass by diffusion from one neuron to another, then it is manifest that it would not be possible for impulses to be confined to definite routes within the neuron.

Origin of Nerve-Impulses.

Nerve-impulses originate within neuro-ceptors, either as a result of (*a*) non-nervous stimuli (heat, light, sound, pressure, &c.) acting upon periphero-ceptors; or of (*b*) neuro-mittors operating upon central neuro-ceptors (dendri-ceptors or somato-ceptors). If we assume that neuro-fibrils constitute the strands along which impulses travel, we must suppose that the neuro-ceptors are situated at the afferent and the neuro-mittors at the efferent extremities of such fibrils, constituting *fibrilo-ceptors* and *fibrilo-mittors*.

The impulse generated in the fibrilo-ceptors undergoes no change as it travels, at the rate of some 30 metres a second, along its fibrillary route to the fibrilo-mittor. It may, or may not, pass through the neurosome, although the entire fibrillary system is probably closely connected with the nucleus; in any case the neurosome has no more effect upon the impulse than has the axon. The essential function of the neurosome is to exercise a trophic influence upon the neuron, an influence which appears to be derived from the nucleus, for with the destruction of the nucleus the entire neuron disintegrates. The neurosome probably also serves the subsidiary purpose of a storehouse of nutriment which is used up in the generation of impulses within the dendri-ceptors and somato-ceptors.

The fact that the ceptors of the peripheral sensory neurons are situated at a considerable distance from the neurosomes shows that, in the case of these neurons at least, the neurosomes do not supply material for the generation of impulses in the ceptors. It further suggests that the generation of impulses within such periphero-ceptors involves the expenditure of comparatively little nervous energy, since there are no large intra-neural stores of energy in the neighbourhood of the periphero-ceptors. Hence it seems probable that more nervous energy is expended in the generation of impulses at the synapse—i.e., by the action of mittors upon central neuro-ceptors—than within the periphero-ceptors.

It must be remembered that the stimulus which excites the periphero-ceptors does not come from the nervous system, but from comparatively gross forces operating outside it. In the central nervous system, on the other hand, the stimuli are supplied by the nervous system—i.e., by mittors. It is probable that the stimulus which these give is much more delicate than that afforded by the comparatively gross non-nervous agencies which excite the periphero-ceptors, and this suggests that the central neuro-ceptors require to be endowed with a correspondingly high explosibility. Be this as it may, the total amount of nervous energy expended in the generation of a nerve-impulse at the synapse (i.e., by the central mittor and the central ceptor together) is greater than that expended within the periphero-ceptor. It has further to be remembered that the intra-neural reactions of the central nervous system demand a more active and rapid generation of nerve-impulses than is required at the periphery.

For these reasons it does not seem improbable that the central ceptors require a larger supply of nutriment than the periphero-ceptors, and it is possible that the neurosomes may serve as storehouses of nutriment which is used up in the generation of impulses within the dendri-ceptors and somato-ceptors.

Nerve-Impulses Originating in the Course of Neuro-fibrils.

Though, normally, nerve-impulses originate in special fibrilo-ceptors, they may, under certain circumstances, be generated by stimuli striking the neuro-fibrils in any part of their course. Impulses thus generated must be regarded as accidental. Whatever may be the case with the peripheral autonomic system, in the central nervous system coördinated nervous action requires that nerve-impulses shall be initiated in neuro-ceptors; coördination is essentially the work of the synapse. Hence special provision is made to limit the generation of impulses to ceptor organs. Not only are fibrils in their course less responsive to stimuli than fibrilo-ceptors, but those contained within axons having more than a very short course are enveloped in sheath, or even in two sheaths,

which afford protection against stimuli. I have already suggested that the essential function of the medullary sheath is to afford this protection.

That nerve-impulses may arise as the result of stimulation of fibrils in their course can be demonstrated in many ways: a muscle can be made to contract by faradising the nerve supplying it; pressure upon a nerve containing sensory fibres, such as the ulnar, causes not only a sensation referred to the part of the nerve compressed (from stimulation of its nervi-nervorum), but also one referred to the area of its peripheral distribution (from pressure on the ulnar fibres in their course); similarly, inflammation of such a nerve may give rise both to tenderness of the nerve trunk (from involvement of the nervi-nervorum) and to pain and paræsthesia in the area of its distribution. Again, disease of the sensory peripheral neurons in the neighbourhood of their neurosomes (spinal root-ganglia, Gasserian ganglion) may give rise to marked sensory disturbance, as exemplified by the pains of tabes dorsalis, herpes zoster, and trigeminal neuralgia. In all these cases the impulses evoking the pain originate, not in the afferent extremities of the fibrils, but in their course.

As in the case of the fibrils belonging to nerve trunks, so in the case of those contained within the central nervous system, stimulation of them anywhere along their course may start impulses. Impulses thus arising may cause (*a*) dynamic changes at the periphery—e.g., muscular spasm; or (*b*) sensations referred to the periphery.

(*a*) Faradic stimulation of any part of the medullated motor tract between the motor cortex and the origin of the motor nerves produces muscular contraction. Clinically, however, a lesion situated in the cortico-spinal motor tract seldom gives rise to an impulse of sufficient intensity to cause muscular spasm, unless there is implication of the motor cortex or of subsidiary motor centres, and in such cases it is probable that the disturbing impulses are initiated in neuro-ceptors.

(*b*) Although stimulation, whether experimental or the result of gross organic disease, of any part of the cerebro-spinal sensory tracts may generate impulses, these seldom give rise to sensations, unless the stimulus is applied direct to grey matter. Thus, grave organic lesions may involve the sensory tracts of the brain and spinal cord without causing any positive sensory disturbance. When disease of the brain or spinal cord causes pain it is generally through the involvement of the meninges. Now these are richly supplied with sensory fibres furnished with peripheroceptors, and pain thus arising is due to the stimulation of these, and is felt in the region of the head. Pain felt at the periphery as the result of cerebral disease (other than that due to involvement of the sensory fibres of the cranial nerves) never results unless grey matter is directly implicated. When the lateral portion of the optic thalamus is involved violent pains may be felt in the opposite side of the body. Head and Holmes attribute the pain in these cases to a withdrawal of the inhibitory action of the cerebral cortex on the optic thalamus. Be this as it may, there is little doubt that the pain in question depends essentially upon impulses originating in neuro-ceptors, and not upon stimulation of nerve-fibres in their course.

Peripherally-referred sensations other than pain are not uncommon as the result of organic disease of the brain. Such are "pins and needles," sensations of heat and cold, which may be felt in one half of the body in hemiplegia, especially in the distal parts of the limbs, and the visual, auditory, and olfactory hallucinations resulting from disease of the corresponding cortical areas. In all these cases the disturbance is due to the direct involvement of the grey matter, and the morbid impulses start in neuro-ceptors. That stimulation of the cortex in gross organic disease may cause not only hallucinations of sight, hearing, taste, and smell (as has long been known), but also sensations referable to various parts of the body, is shown by the fact that such sensations have been induced in man by faradic stimulation of the post-central gyrus.

It is only in disease, however, that the central ceptors (dendri-ceptors and somato-ceptors) are fired by gross stimuli of this kind. Normally they are exploded by stimuli which strike through their related axi-mittors. Only in this way is it possible to get orderly nervous action.

Differences between Nerve-trunk Conduction and Reflex-arc Conduction.

A muscle may be made to contract directly by stimulation of its motor nerve, or reflexly by stimulating a ceptor surface—e.g., the skin. The former is an example of nerve-trunk conduction, the latter of reflex-arc conduction. In the one case the impulses are confined to a single link of neurons; in the other they traverse a chain of neurons. (Fig. 16.)

These two kinds of conduction show marked differences. On what do these differences depend? It might be thought that they are due to the fact that in arc-conduction the impulses are modified in their passage through the neurosomes. We have, however, already given reasons for concluding that nerve-impulses pass unchanged from ceptor to mittor, and that in the case of some neurons they do not even traverse the neurosome. Against the view that they are modified by the neurosome there is further the significant fact that impulses passing up sensory fibres suffer no retardation in traversing the spinal root-ganglia. Hence, even supposing that they traverse the sensory neurosomes in these ganglia (which Cajal denies), it is evident that they suffer no retardation in their transit through them. Again, there is the equally significant fact that impulses can be made to pass in either direction through the root-ganglia, whereas in arc-conduction they pass in one direction only.

The differences between the two forms of conduction are best explained on the assumption that the neuro-fibrils forming a reflex arc do not pass uninterruptedly from one end of the arc to the other, but that intervals, or synapses, exist between the fibrils of successive neurons within the arc. (Fig. 16.) We may suppose that the terminals of the fibrils which face one another on either side of the synapse (i.e., the mittors on the one hand and the ceptors on the other) are peculiarly endowed, the mittors being adapted to stimulate and explode the ceptors, the ceptors to be exploded by the mittors, and by their explosion to generate nerve-impulses. On this assumption a neuro-muscular reflex arc consists of peripheral ceptors, peripheral mittors (within the end plates), and two or more successive series of synaptic articulations between mittors and ceptors.

The chief events take place in the afferent and efferent extremities of the neuro-fibrils—i.e., the fibrilo-ceptors and fibrilo-mittors. The fibrils in their course play little more than a passive part.

The following are the chief differences, as set forth by Sherrington, between the two forms of conduction[3]:—

Nerve-trunk-conduction.	*Reflex-arc-conduction.*
1. There is a speedy end-effect.	1. The end-effect is delayed, being sometimes 30 times longer than in the case of nerve-trunk conduction.
2. Nerve-impulses travel either way—i.e., they are reversible.	2. Nerve-impulses can travel in one direction only—i.e., towards the efferent nerve.
3. The after-discharge is short.	3. The after-discharge is of considerable duration.
4. There is a close correspondence in time between the stimulus and the end-effect.	4. There is no close correspondence in time between the stimulus and the end-effect.
5. The refractory period is inappreciable.	5. The refractory period is appreciable.
6. There is a close correspondence between the degree of stimulus and of the end-effect.	6. There is no close correspondence between the degree of stimulus and of the end-effect.
7. Reciprocal inhibition never occurs.	7. Reciprocal inhibition occurs.
8. Fatiguability is small.	8. Fatiguability is considerable.
9. There is only moderate dependence upon oxygen.	9. There is considerable dependence upon oxygen.
10. There is little susceptibility to poisons.	10. There is great susceptibility to poisons.

These differences are to be explained, on the hypothesis of the synapse, as follows:—

1. The delay in arc-conduction is chiefly due to the time spent in firing the ceptors. (Fig. 16, 1, 3, 5.) Observe that there is no delay in the conduction of an impulse through the spinal root-ganglia.

2. The irreversibility of arc-conduction (polarisation) is to be explained on the assumption that nerve-impulses can only be started on the ceptor side of the synapse, the ceptor being adapted, and the mittor not being adapted, for the generation of impulses. The relation of the two is that of the trigger to the cap. Note that conduction through the spinal root-ganglia is reversible.

3. When a muscle is made to contract reflexly, the contraction may persist some time after the cessation of the stimulus. It may last 30 times longer than when the stimulus is applied to the motor nerve directly. This lengthy after-discharge is one of the most characteristic

[3] The Integrative Action of the Nervous System, London, 1906.

differences between arc- and trunk-conduction. We may suppose that the central ceptors (dendri-ceptors and somato-ceptors) when once stimulated tend for a time to discharge automatically. This is one among many considerations which point to the fact that the central ceptors are highly explosive.

4. When a motor nerve is stimulated there is close correspondence in time between the stimulus and the resulting contraction: sustained stimulus causes sustained contraction; rhythmic stimulation causes rhythmic contraction at the same rate. If, e.g., the nerve is stimulated at the rate of 80 times a second, the muscle contracts at the same rate. When, on the other hand, a muscle is made to contract reflexly, as by stimulating the skin, there is much less close correspondence in time between the stimulus and the end-effect. It is not possible, e.g., to induce a protracted contraction reflexly. Again, a stimulus, whether momentary or sustained, exciting a reflex action, is very apt to produce a rhythmic end-effect. This is well illustrated by the "scratch reflex" in the dog. This reflex consists of a scratching movement of the hind leg, occurring at the rate of about four times a second; it may be excited by a variety of different stimuli applied to any point within a large saddle-shaped area on the back. It is remarkable that the rate of rhythm is always much the same for all varieties of stimuli. No matter how rapid the stimuli, even if they are applied, e.g., by double induction shocks succeeding each other at the rate of 100 per second, the rate of the movement remains practically the same. Sherrington was able to increase the rate very slightly by increasing the intensity of the stimulus, but he was not able, even by very powerful stimuli, to convert the "rhythmic clonic beat" into a maintained steady contraction.

To explain the marked non-correspondence between the stimulus and the end-effect in arc-conduction we must assume some degree of autonomy on the part of the central ceptors. In the case of the scratch reflex, e.g., we must suppose that they are endowed with the power of discharging rhythmically under certain conditions.

5. The term "refractory phase," as applied to an excitable cell, signifies the period immediately succeeding a response to a stimulus, during which the cell, independently of fatigue, ceases to respond to that stimulus. Mott attributes this phenomenon to a using up of oxygen. The occurrence of such a phase in the central ceptors would explain the occurrence of reflex rhythmic responses at a fixed rate, under a continued stimulus (as in the case of the scratch reflex). We may suppose the ceptors after each discharge to enter upon a refractory phase, during which stimuli are incapable of inciting them to a further generation of impulses.

The phenomenon of refractory phase is well displayed by the medusa (Sherrington). This creature propels itself through the water by a rhythmic contraction and relaxation of its swimming bell. Ceptor organs situated at the edge of the bell are placed in connexion with what appears to be a *continuous* nerve-network supplying the muscle-tissue of the bell, so that the entire musculature can be stimulated through any one ceptor. Nerve-impulses are started in these ceptors by the continued stimulus afforded by contact with the water, and inasmuch as the resulting contractions are rhythmic we are compelled to postulate the existence of a refractory phase either in the ceptors, the nerve-network, or in the muscle-tissue. The latter supposition can be eliminated. Though not definitely proved, it is probable that the refractory period pertains essentially to the ceptors.

6. When a motor nerve is stimulated, the degree of muscular contraction bears a definite relation to the intensity of the stimulus, provided this be neither very intense nor very weak. There is no such relation between the degree of stimulus and of contraction when the muscle is excited reflexly. In this case the result of the stimulus may be "all or nothing"; sometimes (as in marked strychnine poisoning) all reflexes are maximal. This peculiarity, like all other peculiarities of reflex-arc-conduction, is due to the fact that nerve-impulses started in the periphero-ceptors of the arc do not pass uninterruptedly through a fibrillary continuum, but have to be generated *de novo* in each successive ceptor within the arc. We may suppose that the central ceptors are so constituted that they tend, when stimulated by their mittors, to generate the same intensity of impulse in response to all intensities of stimulus.

7. In the mammal a contracted muscle can never be made to relax by stimulating its motor nerve. The latter, i.e., has no power of inhibiting muscular contraction. On the other hand, in movements reflexly induced the phenomenon of "reciprocal inhibition" is observed—i.e., while certain muscles are made to contract, others are inhibited and made to relax. This inhibitory action is assumed to take place at the synapses: we may suppose that while certain mittors effect a synaptic linking, others bring about a synaptic unlinking. (This will be dealt with later in the section on Inhibition.)

8. The high degree of fatiguability manifested in arc-conduction is doubtless associated with changes going on in the region of the synapse, and depends chiefly upon the large supply of oxygen which these changes demand. It is probable that this fatiguability involves the central ceptors chiefly, but it may also involve the central mittors. It is noteworthy in this connexion that the mittors placed in relation with striped muscle are more fatiguable than the axons (motor fibres) themselves.

9. The large supply of oxygen demanded by arc-conduction is rendered necessary by the active expenditure of energy in the region of the synapse.

10. Many agents—e.g., chloroform, ether, strychnine, tetanus-toxin—which have little or no effect on trunk-conduction exert a profound influence on arc-conduction. Though doubtless certain of them exercise a specific effect upon the neurosome, it is probable that they influence neuron function chiefly by their action on the central ceptors and mittors.

(To be concluded.)

THE INTERNATIONAL EUGENICS CONGRESS.

THE First International Eugenics Congress was inaugurated under the Presidency of Major LEONARD DARWIN in London on July 24th by a banquet and reception held at the Hotel Cecil, an account of which we published last week (p. 274).

The Congress, representative of almost every nationality, commenced the work of the sections at the University of London on July 25th and closed on July 30th.

SECTION 1.—*Biology and Eugenics.*

After the delivery of the presidential address, with which we deal in a leading article in our present issue, several interesting papers were read and discussed on questions having a very practical bearing on modern life and its manifold developments, questions which will have to be considered by every civilised country, as was pointed out at the inaugural banquet by Mr. Balfour.

Mr. R. C. PUNNETT, professor of biology in the University of Cambridge, dealt with the subject of the elimination of feeble-mindedness in a paper under the title of "Eugenics and Genetics." Professor Punnett desired to control human mating upon rules obtained by the knowledge of what characters are transmissible, and said that he thought feeble-mindedness to be an example of simple Mendelian inheritance.

Professor ENRICO MORSELLI, director of the Neurological Clinic at Genoa, read a paper on Ethnic Psychology and the Science of Eugenics, in which he pointed out that the natural varieties of the races of mankind differed in their mental as well as in their physical characteristics. Each race or nation should contemplate the preservation of its own ethnic type; for differentiation among peoples was an indispensable factor in human progress.

Professor V. GUIFFRIDA-RUGGERI (University of Naples) presented a paper on the So-called Laws of Heredity in Man, in which he maintained that Mendelian laws found verification in the human species. Each race displayed certain characters inherited from racial ancestry, and these were completely transmitted to descendants, he believed, by whom the same germ plasm was preserved as in their begetters. The characters of the two parents struggled against each other, and when the hereditary energy was equal on both sides the fusion of the maternal and paternal characters produced an intermediate character. This had

been pointed out by others than Mendel. If the energies were unequal the offspring inherited a character dominated by one of the parents in one direction and by the other parent in another.

Dr. RAYMOND PEARL, biologist of the Maine Experiment Station, Orono, U.S.A., gave his conclusions on fecundity founded on experiments with 13 generations of fowls. He said that the fecundity of a hen was not a thing from which alone it was possible to predict the probable egg production of her female progeny, notwithstanding that fecundity was in some manner or other an inherited quality. In his opinion a fertile hen transmitted her fecundity to her male progeny, and it was passed on by them to the hens of the next generation.

Dr. DAVID F. WEEKS, medical superintendent and executive officer, the New Jersey State Village for Epileptics, presented an analysis dealing with the histories of many marriages according to the Mendelian method. The paper was an endeavour to indicate the laws which epilepsy follows in its recurrence in successive generations. He said that the common types of epileptics lacked something which was essential for complete mental development, as was the case with the feeble-minded, and he threw suspicion upon alcohol as a hereditary factor.

In the discussion which followed, Mr. VINCENT NÆSER, honorary secretary of the Danish Eugenics Committee, said that the radical method of dealing with the marked progenitive tendencies of epileptics was sterilisation; but in Denmark they had established a plan of special land colonies with segregation of sex. These colonies were practically self-supporting and had been very successful.

Dr. ANTONIO MARRO, who is the head of the lunatic asylum at Turin, read a paper on the subject of "The Influence of Parental Age on the Psycho-Physiological Characters of Children," in which he showed that the children of aged parents were more addicted to crime than those the result of earlier marriages.

Dr. SOREN HANSEN, director of the Danish Anthropological Committee, Copenhagen, in a paper on the Increase of Stature in certain European Populations, showed that during the past 50 or 60 years the average height of the adult in Denmark, Norway, Sweden, and Holland had increased by 1½ inches.

Professor L. SERGI (Rome) sent a paper on Variation and Heredity in Man.

SECTION 2.—*Practical Eugenics.*

July 26th was largely devoted to discussions of the relations of the sexes, some statistics presented by Dr. F. L. HOFFMANN, statistician of the Prudential Insurance Company of America, resulting in an animated and interesting debate. Dr. Hoffmann's paper dealt with the Maternity Statistics of the State of Rhode Island, and showed (1) that half the population of this small State was of foreign extraction; and (2) that the foreign-born women were more frequently married and had families than the native-born women. Another interesting fact brought out was the larger percentage of Roman Catholic married women who were mothers. He expressed the opinion that unless the better classes of America responded to their duty of increasing and multiplying there would be little chance of the survival of those British ideas and British institutions which in his opinion stood for so much in making the world a good place to live in.

Dr. MURRAY LESLIE said that the story of the State of Rhode Island was the story in the East-end of London.

Mrs. A. HEMSLEY expressed the opinion that the root cause of small families among the middle classes was the desire of parents to give their children advantages which they themselves had not enjoyed; with this object they had two or perhaps three children only.

Dr. ALFRED PLOETZ, president of the International Society for Race Hygiene, dealt with the question of "The Bearing of Neo-Malthusianism upon Race Hygiene," and Mr. C. P. DAVENPORT, director of the Eugenics Record Office, U.S.A., read a paper on Marriage Laws and Customs, in which he said that the only way to prevent reproduction of the feeble-minded was to sterilise or segregate them.

Mr. BLEECKER VAN WAGENEN, chairman of the Committee of the Eugenic Section of the American Breeders' Association, read a report on the best practical means for cutting off the defective germ-plasm in the human population, which dealt with the results of the laws authorising or requiring sterilisation of certain classes of criminals, defectives, and degenerates in eight of the States of the union.

Sir JOHN MACDONELL, who opened the discussion, said that those laws seemed to him, as a criminologist, to give a wrong rather than a right way. It seemed to be assumed that in all cases the criminal was a manufactured article, but he was really a by-product of poverty, and there was no warrant for the theory that he was the victim of certain mental or physical defects which he could transmit to his progeny. The criminal had in him the potentiality of good things. A properly administered system of segregation would be productive of better results than any system of sterilisation.

M. FRÉDÉRIC HOUSSAY, professor of the Faculty of Science in the Paris University, was in favour of sterilisation for the extinction of focuses of contamination from which a spread might imperil higher civilisation.

SECTION 2A.—*Education and Eugenics.*

On July 27th Dr. F. S. C. SCHILLER (Oxford) contributed a very interesting paper on Practical Eugenics in Education. His words were a humorous defence of the English public school system, whereby intellectual activity was stimulated by scholarships largely given for studies of no utilitarian value in themselves, while the cult of athletics was also used to produce the best citizen.

Mr. G. SMITH, professor of sociology, Minnesota University, U.S.A., read a paper on Eugenics and the New Social Conscience, in which he contended that there was not the slightest evidence that talent of any particular form was ever inherited. He pointed out that England had turned criminals to good use when she sent them to America to become the founders of the first Virginian families and to Australia to produce Prime Ministers.

SECTION 3.—*Sociology and Eugenics.*

On July 29th, among the many questions which occupied the attention of the members of the Congress the bearing of eugenics on military training created the greatest interest.

Professor VERNON L. KELLOGG (Stanford University, California), in the paper which he presented on Eugenics and Militarism, dwelt on the disastrous effects on a country through loss of life at war time; the withdrawal from the community at the time of their greatest vigour and fertility of large numbers of men who might otherwise help in increasing the population; and the spread of disease contracted in military service through the community.

This paper resulted in an interesting discussion in which General VON BARDELEBEN contended that military life was not so "dysgenic" as had been said, and that war was now decided not by the expenditure of human life, but by the quality of leadership and by the discipline among the men in time of peace.—Colonel C. H. MELVILLE, R.A.M.C., affirmed that militarism was distinctly eugenic; Colonel WARDEN maintained that army training had distinctly improved the physical standard of the British soldier, and that disease in the army was decreasing; and Mr. ARNOLD WHITE endorsed the views of these two speakers.

Professor ALFREDO NICEFORO (University of Naples), in a paper on the Cause of the Inferiority of Physical and Mental Characters in the Lower Social Classes, while attributing deterioration to bad environment and bad heredity, pointed out that the remedy was for fusion to take place between the classes to such an extent as to allow the best of the lower classes a chance to ascend.

Professor ACHILLE LORIA (University of Turin) read a paper on the Psycho-Physical Elite and the Economic Elite, which deprecated marriages for money rather than for superior qualities.

Prince KROPOTKIN, in the discussion which ensued on these two papers, remarked that sterilisation of the presumed unfit would do harm, and inquired whom it was proposed to sterilise as unfit—the poor women who suckled their children or the women of the upper classes who refused maternity.

Professor ROBERTO MICHELS (University of Turin) read a paper on Eugenics in Party Organisation; Dr. ADAM WOODS (Harvard Medical School) a paper on Some Inter-relations between Eugenics and Historical Research; and Mr. and Mrs. W. C. D. WHETHAM (Cambridge) a paper on the Influence of Race on History, in which the theory

was advanced that the supremacy of Western nations depended upon the preponderance of the tall blonde portion of their populations over the short and dark members.

SECTION 4.—*Medicine and Eugenics.*

On July 30th the proceedings of the Congress were concluded by the farewell address of the President. Among the subjects discussed on that day were Alcoholism and Syphilis, papers being read by Professor HALLOPEAU (Paris), Dr. ALFRED MJOËN (Kristiania), Dr. MAGNAN (Paris), and Dr. FILLASSIER (Paris).

Dr. AGNES BLUHM (Berlin) read a paper on Eugenics and Obstetrics; Dr. F. W. MOTT (London) a paper on Heredity and Eugenics in Relation to Insanity; and Mr. H. E. JORDAN (Virginia) a paper on the Place of Eugenics in the Medical Curriculum.

The Exhibition.

Much interest was shown in the collection of charts, pedigrees, and specimens illustrative of heredity which were brought together at the University of London for the purposes of the Congress. The papers, &c., of Charles Darwin, Sir Francis Galton, and the Abbé Mendel were examined with great attention, and sharing interest with a fine collection of portraits of distinguished workers in the eugenic field.

Social Arrangements.

During the week of the Congress an excellent programme of receptions and entertainments was provided for the members and their friends. The Duchess of Marlborough held a reception at Sunderland House, Curzon-street, the Lord Mayor of London received the members of the Congress at the Mansion House, the American Ambassador and Mrs. Whitelaw Reid gave a reception at Dorchester House, Park-lane, and a lunch and garden party was given by Mr. Robert Mond at Sevenoaks, while a number of invitations were accepted to witness the exhibition flights at the London Aerodrome. The reception at the University of London by the President and Mrs. Leonard Darwin was well attended.

CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

(FROM OUR OWN CORRESPONDENT.)

THE Berlin Congress of the Royal Institute of Public Health, was solemnly opened on Thursday, July 25th, in the Prussian House of Lords. The great hall of the House offered a fine view when the British members and German delegates were present in their State uniforms or academical robes. The chair was taken by Sir WILLIAM LEVER, Bart., President of the Liverpool School of Tropical Medicine and late President of the Birkenhead Congress of the Institute. After a few words of welcome he invested the President of the Berlin Congress, the Earl BEAUCHAMP, His Majesty's First Commissioner of Works, and President of the Institute, who then delivered his inaugural address. He said that although his stay in Berlin was due to scientific and not to political reasons, he nevertheless believed it his duty to express the wish that no misunderstanding or unfriendly feeling might ever arise between these two great nations. He explained the work done by the institute in respect to hygienic development, and alluded to the national insurance laws, planned and carried out after the pattern of those in force in Germany. He finally delivered a eulogy on the late Professor Koch.

The Principal of the Institute, Professor WILLIAM SMITH, then announced the award of the Harben medal for 1912 to Professor Roux, of the Institut Pasteur in Paris. He next introduced H.E. the General Staff Surgeon of the German army and chief of the Army Medical Corps, Professor Dr. von Schjerning, and the Director of the Medical Department in the Ministry of the Interior, Professor Kirchner, for admission to the Honorary Fellowship of the Institute, and described the work done by these two gentlemen for hygiene. An address was delivered by Professor Kirchner as President of the Berlin Committee for the Reception of the Congress. He said that Germany was indebted to England for many ideas in politics, art, and science. In medicine especially he mentioned the names of Harvey, Jenner, and Lister as the founders of modern medicine.

The Vice-Mayor of Berlin, Dr. REICKE, welcomed the Congress in the name of the city, and the Rector of the University, Professor Lenz, the Rector of the Technical College, Professor Josse, the dean of the medical faculty of the University, Professor Hildebrandt, in the names of their respective bodies, and Dr. Stöter, the president of the committee of the medical chambers of Prussia, in the name of the medical profession. The Congress then began its work in the sections.

I only attempt a passing reference to some of the numerous papers. In the section for State Medicine an address was delivered by Professor Silberg, director of the Statistical Office of the city of Berlin, on "The Mortality in Germany and in England." He explained that the mortality was decreasing in both countries, but more in England than in Germany. The birth-rate was, however, decreasing more in England. In the same section an admirable address was delivered by Sir Clifford Allbutt, entitled "The Integration of the 'Social Organism'" (see p. 283). In the section for Tropical Diseases a paper was read by Professor Ziemann on "Tuberculosis among the Native Population in Africa." He stated that some districts of Africa were believed to be immune against tuberculosis, but that actually the disease was spread over nearly the whole of Africa. In the section for Child Study and School Hygiene Dr. NEUFFERT, inspector of schools of Charlottenburg, read a paper on the "Forest School" of that city.

Dr. D. M. TAYLOR (Halifax) spoke in favour of residential open-air schools, because it was, in his opinion, more important to have the children removed during night from their unhealthy homes. Dr. DRIGALSKI, medical officer of Halle, was of the same opinion.

Mr. J. CANTLIE (London) read a paper on the "Clothing of Boys," which was listened to with much attention.

A principal feature of the Congress was the inspection of various institutions of Berlin. Among others the Municipal, Statistical, and Analytical departments, the Cripples Hospital and College, the Vaccination Institute, the Tuberculosis Museum, the Robert Koch Royal Institute for the Study of Infectious Diseases, the Forest School, the Virchow, the Charité, and the Charlottenburg Hospitals, the sanatoria at Belitz, the Municipal Asylums for the Aged in Buch were visited. The social side of the Congress included a banquet given by the municipality in the Town Hall, a dinner in the zoological garden, and a trip to Potsdam.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on July 25th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College:—Edward Wemyss Browne, L.R.C.P., Captain, I.M.S.; George Dansey-Browning, L.R.C.P., Major, R.A.M.C.; Philip Hamill, L.R.C.P.; Alfred Charles Jordan, M.D. Cantab., L.R.C.P.; James MacPherson, M.B. Glasg., Captain, I.M.S.; Bernhard Ehrenfried Myers, M.D. Edin., L.R.C.P.; Hugh Ridley Prentice, L.R.C.P.; Matthew John Stewart, M.B. Glasg.; Arnold Walmsley Stott, L.R.C.P.; and William Rees Thomas, M.D. Lond.

Licences to practise were granted to 102 gentlemen who had passed the requisite examinations.

Diplomas in Public Health, were granted in conjunction with the Royal College of Surgeons of England, to the following: Ram Swarup Agrawal, Thomas Barbour, William Ashley Beet, Percy Stanley Blaker, Herbert Charles Horace Bracey, James Carrick, Francis Garland Collins, Sidney Herbert Daukes, William Gillitt (Captain, I.M.S.), Ernest Whitmore Newton Guinness, Charles Tilson Hudson (Lieutenant-Colonel, I.M.S.), Charles William McLeay, Joseph Victor Mascarenhas, Kalka Prasad Mathur, Thomas Massey Pearce, John McFarlane William Pollard, Ernest Littleton Sandiland, Dorothea Lenore Schwabe, Herbert Chavasse Squires, Gustav Weber Thompson, and John Thompson.

The following appointments to lectureships were announced: Goulstonian lectures, Dr. A. J. Jex-Blake; Oliver Sharpey lectures, Dr. Augustus Waller; Lumleian lectures, Dr. F. de Havilland Hall; Croonian lectures (1912), Dr. C. S. Sherrington (in place of the late Dr. J. Dixon Mann); and FitzPatrick lectures, Dr. C. A. Mercier.

The Murchison Memorial Scholarship was awarded to Dr. W. R. Thomas; Mr. Philip Hamill and Mr. E. G. Schlesinger received honourable mention.

The following Censors, other College officers, and examiners were elected on the nomination of the President, the Council, and the Library Committee:—Censors: Dr. Seymour John Sharkey, Dr. Samuel Hatch West, Dr. Percy Kidd, and Dr. William Hale White. Treasurer: Sir Dyce Duckworth, Bart. Emeritus Registrar: Dr. Edward Liveing. Registrar: Dr. Joseph Arderne Ormerod. Harveian Librarian: Dr. Norman Moore. Elected Members of the Library Committee: Dr. Humphry Davy Rolleston, Dr. Leonard George Guthrie, Dr. Herbert Morley Fletcher, and Dr. Raymond H. P. Crawfurd. Curators of the Museum: Dr. John Mitchell Bruce, Dr. Seymour John Sharkey, Dr. Frederick William Andrewes, and Dr. William Hunter. Finance Committee: Dr. Howard Henry Tooth, C.M.G., Dr. Hector William Gavin Mackenzie, and Sir James Reid, Bart., G.C.V.O., K.C.B. Examiners: Chemistry, Mr. John Millar Thomson and Mr. Hugh C. H. Candy; Physics, Mr. Alfred Henry Fison and Mr. Herbert Stanley Allen; Practical Pharmacy, Dr. Edmund Ivens Spriggs, Dr. William James Fenton, Dr. Alfred Ernest Russell, Dr. Arthur Robertson Cushny, and Dr. Robert Briggs Wild; Physiology, Dr. Francis Gotch and Dr. John Mellanby; Anatomy, Dr. Christopher Addison; Medical Anatomy and Principles and Practice of Medicine, Dr. Wilmot Parker Herringham, Dr. Richard Grainger Hebb, Dr. Lauriston Elgie Shaw, Dr. Judson Sykes Bury, Dr. Hector W. G. Mackenzie, Dr. Arthur Francis Voelecker, Dr. Cyril Ogle, Dr. Raymond H. P. Crawfurd, Dr. Wilfred John Harris, and Dr. Harold Batty Shaw; Midwifery and Diseases peculiar to Women, Dr. Charles Montague Handfield-Jones, Dr. Arthur Hamilton Nicholson Lewers, Dr. Arthur Francis Stabb, Dr. George H. A. Comyns Berkeley, and Dr. John Shields Fairbairn. Public Health: Part I., Dr. Henry Richard Kenwood; and Part II., Dr. Louis C. Parkes. Tropical Medicine: Bacteriology, Dr. Frederick William Andrewes; Diseases and Hygiene of the Tropics, Dr. William John Ritchie Simpson, C.M.G.

The Moxon Medal for distinction in clinical medicine was awarded to Sir David Ferrier, M.D., F.R.S.

Two clinical thermometers formerly in the possession of Lord Lister were received from the President of the Royal College of Surgeons of England, and the thanks of the College were ordered to be returned to the donor.

The following communications were received:—1. Three from the Secretary of the Royal College of Surgeons of England reporting proceedings of the Council of the College at meetings held on May 9th, June 13th, and July 11th. 2. From the Registrar of the General Medical Council, dated June 28th, concerning changes in the resolutions of the Council with regard to professional education. 3. From the Dean of the Medical School of St. Bartholomew's Hospital, dated June 29th, concerning the inadequate supply of "subjects" for the teaching of anatomy and physiology. It was resolved to act in concert with the Royal College of Surgeons of England. 4. From Mr. B. Berenson asking leave to photograph the College portrait of Vesalius. The request was granted.

A report was received from the President as representative of the College at the celebration of the 250th anniversary of the Royal Society.

A report was received from the Treasurer (Sir Dyce Duckworth) as one of the representatives of the College at the celebration of the 200th anniversary of the Medical School of Trinity College, Dublin. The REGISTRAR (Dr. J. A. Ormerod) read the eloquent Latin addresses prepared by himself for presentation on that occasion.

Dr. W. P. Herringham was re-elected as representative of the College on the Court of Governors of the University of Sheffield.

Dr. Sidney H. C. Martin, F.R.S., was re-elected a representative of the College on the Executive Committee of the Imperial Cancer Research Fund.

A report was received from the representative of the College upon the General Medical Council.

The annual report of the Imperial Cancer Research Fund was received.

Reports were received and adopted from the Committee of Management. One, dated June 3rd, reported that—

The committee had considered the new rules which the General Medical Council have laid down in reference to Diplomas in Public Health in order that such diplomas may "deserve recognition in the Medical Register." The new rules are based on the recommendations of the Public Health Committee of the General Medical Council, modified in some respects as the result of reports by the various examining bodies, including the Royal Colleges, and on which the Committee of Management fully reported on Oct. 17th last. The committee have consulted the Examiners in Public Health on various points arising out of the new rules, and after full consideration they now recommend that the new rules of the General Medical Council be adopted by the Royal Colleges for their Diploma in public health, with one exception—and that is, that the period of six months' laboratory instruction for the diploma granted by the Colleges be maintained instead of being reduced to a period of four months, as approved by the General Medical Council. The total number of hours of laboratory work (240) is to be required in any case, but the Committee of Management are of opinion that it is better that these 240 hours should be extended over the longer period of six months.

The committee recommended that the following institutions, which had been visited by members of the committee and reported as fulfilling the requirements of the Board, be added to the list of institutions recognised by the Examining Board in England for instruction in the subjects respectively mentioned: Chemistry and Physics, King Edward's School, Birmingham. Chemistry, Girton College, Cambridge. Biology, Sherborne School. (This school is already recognised for Chemistry and Physics.)

The report dated June 25th recommended:—

1. That the following institution, which had been visited by a member of the committee and reported as fulfilling the requirements of the Board, be added to the list of institutions recognised by the Examining Board in England for instruction in Chemistry and Physics: Holt, Norfolk—Gresham School.
2. That Sir Henry Morris, Bart., be appointed the Visitor to the examinations of the Egyptian Medical School for the examinations to be held in December next.
3. That the Colchester Borough Isolation Hospital be added to the list of fever hospitals recognised by the Examining Board in England.

The report dated July 9th recommended that the Barking Isolation Hospital be added to the list of fever hospitals recognised by the Examining Board in England.

The PRESIDENT drew attention to the completion of the catalogue of the Library of the College, which has now been published and can be obtained at the College.

After some further formal business the PRESIDENT dissolved the Comitia.

CENTRAL MIDWIVES BOARD.

A SPECIAL meeting of the Central Midwives Board was held on July 23rd at Caxton House, Westminster, Sir FRANCIS H. CHAMPNEYS being in the chair.

The Board considered the following charges, amongst others, against the midwives whose names are given below, and ordered them to be struck off the roll. Mary Eliza Boyce, that being in attendance as a midwife at a confinement she was guilty of malpractice, negligence, and misconduct in the following respects: (*a*) that though she was unable to make out the presentation she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (3); (*b*) that a hand afterwards presenting she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (3); and (*c*) that she pulled on the child's arm until it came out of the socket. Ellen Dixon, that being in attendance as a midwife at a confinement, the child suffering from inflammation of and discharge from the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5). Elizabeth Donaghue, that she did not possess the appliances or antiseptics required by

Rule E. 2, and that by reason of age and physical infirmity she was unable to perform her duties as a midwife with safety to her patients. Elizabeth Ann Jackson, that she was unable to make use of a clinical thermometer, and consequently could not comply with Rule 2. 13, and that she did not keep a register of cases as required by Rule E. 23. Margaret McQuilling, that she did not take with her to confinements the appliances and antiseptics required by Rule E. 2, and that such appliances as she possessed were uncleanly and badly kept. Julia Mary Ann Markham, that being in attendance as a midwife at a confinement she neglected to examine the placenta and membrane and to satisfy herself that they were completely removed, as required by Rule E. 9; she failed to stay with the patient until the expulsion of the placenta, as required by Rule E. 6; and she did not take the patient's temperature. Ann Oates, that she did not take with her to confinements the appliances and antiseptics required by Rule E. 2, and that though frequently warned she persistently refused to provide herself with the necessary bag and equipment. Jane Payne, that being in attendance as a midwife at a confinement, the patient suffering from severe abdominal pain from the time of delivery, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (4). Mary Ann Penketh, that she was uncleanly in her person, clothing, and appliances; that when attending her patients she did not wear a clean dress of washable material, as required by Rule E. 1; and that she was unable to take a pulse or temperature, and consequently could not comply with Rule E. 13. Elizabeth Poundall, that being in attendance as a midwife at a confinement she did not wear a clean dress of washable material as required by Rule E. 1; she did not adopt the antiseptic precautions required by Rules E. 3 and 7; the case being one of twins, after the birth of the first child she pulled on the cord until it broke, and medical advice having been sought for the delivery of the placenta she failed to notify the local supervising authority thereof.

Charlotte Ridden, that being in attendance as a midwife at a confinement, the patient suffering from severe hæmorrhage, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (4); when she washed the patient she used the water in which the baby had already been washed, and she did not take the patient's pulse or temperature at any time. Jane Roberts, that at the petty sessions held at Rhyl on April 8th, 1912, she was convicted of stealing a gold diamond ring, a gold brooch, and a pair of gloves, and was sentenced to one month's hard labour. Sarah Robinson, that being in attendance as a midwife at a confinement, having advised that medical assistance should be obtained, she failed to notify the fact to the local supervising authority, as required by Rule E. 21 (1); that she was uncleanly in her person, clothing, appliances, and house, and that she did not possess the appliances and antiseptics required by Rule E. 2. Sarah Saxe, that being in attendance as a midwife at a confinement she washed the patient on three occasions only after the confinement, using the water in which the baby had already been washed, and the lochia being persistently offensive she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (4). Eleanor Ann Smith, that she did not take with her to a confinement the appliances and antiseptics required by Rule E. 2; that she was unable to take a pulse correctly or to make use of a clinical thermometer, and consequently cannot comply with Rule E. 13, and that she habitually failed to notify the local supervising authority in cases where the rules require her to do so. Eliza Swyer, that being in attendance as a midwife at a confinement, the child suffering from inflammation of, and discharge from, the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5). Mary Jane Wilson, that she did not possess the appliances and antiseptics required by Rule E. 2; that she was unable to use a clinical thermometer; and that she refused to wear a dress of washable material when in attendance upon her patients. Susan Wolfenden, that being in attendance as a midwife at a confinement, the patient's perineum being seriously ruptured, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (3); that she washed the patient on three occasions only after the delivery, and that she did not keep her register of cases as required by Rule E. 23.

The following midwives were censured after charges against them had been considered: Elizabeth Brearley, Ellen Fisher, Lucy Marsden, and Alice Swain. Frances Amelia Preston was cautioned after charges against her had been considered.

A meeting was also held on July 25th at Caxton House, Westminster, Sir FRANCIS H. CHAMPNEYS being in the chair. A letter was considered from a candidate who had failed to pass the Board's examination on two previous occasions, and who for the purpose of obtaining a post falsely stated that she had passed the examination, asking permission to enter for the next examination. The Board directed that the candidate be informed that her certificates of character are void and that she cannot be admitted to the examination until the Board is satisfied by special testimony that she is a trustworthy person.

A letter was considered from the clerk of the Notts county council suggesting a material modification of the limitations imposed on suspension by Rule F. 2. The Board decided that the letter from the clerk of the Notts county council lie on the table. A letter was considered from the clerk of the East Sussex county council, enclosing a copy of a report by the county medical officer of health with regard to the failure of Sarah Linton, No. 16591, to notify the authority when she had advised medical help. The Board directed that a copy of the correspondence be forwarded to the Privy Council.

A letter was considered from the honorary secretary of the Norwich Maternity Charity, renewing the application of the charity for permission to hold written examinations at Norwich. The Board directed that the application be granted. A letter was considered from the medical officer of health for Manchester suggesting that pupil midwives should be obliged to reside with the midwife by whom they are being trained. The Board decided that the reply be that the Board is not prepared at present to amend the rules in the sense desired. A letter was considered from the matron of the Newport Maternity Home as to notifying the local supervising authority; also a letter was considered from the local supervising authority on the same subject. The Board directed that the Newport health committee be informed that they appear to have misunderstood the Board's letter, and that they also be informed of the chairman's opinion as communicated to Miss Barrett, and of her undertaking to comply with it; and that the Board trusts there will be no further obstacle to the friendly coöperation of both parties in future. A letter was considered from the county medical officer for Cheshire as to the propriety of advertising by a midwife. The Board directed that the reply be that the Board is unable to express an opinion on matters which may come before it in a judicial capacity.

UNIVERSITY OF EDINBURGH.—The resignation of Professor Greenfield from the chair of pathology has been accepted, to take effect from Sept. 30th. He will be granted a retiring allowance.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on July 25th, the President, Sir RICKMAN GODLEE, being in the chair.

Mr. D'Arcy Power was introduced, and having taken the oath in the terms prescribed by the Charter of 1800, was admitted a member of the Council.

Diplomas of Membership were issued to 95 successful candidates, and Diplomas in Public Health were issued, in conjunction with the Royal College of Physicians of London, to 21 successful candidates.

Mr. L. A. Dunn was re-elected a member of the Court of Examiners, and Mr. W. H. Dolamore was appointed a member of the Board of Examiners in Dental Surgery.

The finance committee presented the audited balance sheet and statement of accounts, and they were approved by the Council.

It was resolved to place a bust of Lord Lister in the College, and the work was entrusted to Sir Thomas Brock.

The Barking Isolation Hospital was added to the list of fever hospitals recognised by the Examining Board in England.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 95 largest English towns, having an estimated population of 17,639,881 persons in the middle of this year, 8641 births and 3807 deaths were registered during the week ending July 27th. The annual rate of mortality in these towns, which had been 10·8, 11·6, and 11·5 in the three preceding weeks, further fell to 11·3 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these 95 towns averaged 11·3 per 1000, while in London during the same period the average death-rate was also 11·3 per 1000. The annual death-rates last week in the several towns ranged from 3·2 in Ealing, 3·8 in Coventry, 5·0 in Devonport, 5·2 in Acton and in Bath, to 16·0 in Ipswich, 17·2 in Hastings, 19·1 in Bootle, 20·0 in Blackpool, and 20·6 in Middlesbrough.

The 3807 deaths from all causes in the 95 towns last week were 99 below the number in the previous week, and included 417 which were referred to the principal epidemic diseases, against 342, 378, and 391 in the three preceding weeks. Of these 417 deaths, 148 resulted from measles, 153 from infantile diarrhœal diseases, 44 from whooping-cough, 40 from diphtheria, 22 from scarlet fever, and 10 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 1·3 per 1000, against 1·1 and 1·2 in the two preceding weeks. The deaths attributed to measles, which had been 139, 148, and 156 in the three preceding weeks, fell again to 148 last week, and caused the highest annual death-rates of 2·5 in Merthyr Tydfil, 3·0 in Wakefield, 3·3 in Rotherham, and 8·3 in Middlesbrough. The deaths of infants under 2 years of age referred to diarrhœa and enteritis, which had been 72, 89, and 99 in the three preceding weeks, further rose to 153 last week, and included 48 in London and in suburban districts, 13 in Liverpool, 9 in Manchester, 8 in Hull, and 7 each in Birmingham and in Leeds. The fatal cases of whooping-cough, which had been 69, 72, and 67 in the three preceding weeks, were 44 last week; 13 deaths were recorded in London and in suburban districts, 7 in Liverpool, 3 in Manchester, and 2 each in Birmingham, Grimsby, and Merthyr Tidfil. The deaths attributed to diphtheria last week numbered 40, and were 6 above the average in the six preceding weeks; 17 deaths occurred in London and in suburban districts, and 3 each in Cambridge and in Leeds. The deaths referred to scarlet fever, which had been 15, 27, and 19 in the three preceding weeks, rose to 22 last week, and included 6 in London and suburban districts, and 3 in Birmingham. The fatal cases of enteric fever, which had been 10, 8, and 14, in the three preceding weeks, fell to 10 last week, and included 2 in Wigan and 2 in Cardiff, but not more than one in any of the other of the large towns.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospitals, which had steadily increased from 1213 to 1482 in the nine preceding weeks, further rose to 1525 on Saturday last; 222 new cases of this disease were admitted to these institutions during the week, against 201, 227, and 190 in the three preceding weeks. These hospitals also contained on Saturday last 850 cases of diphtheria, 642 of measles, 414 of whooping-cough, and 33 of enteric fever, but not one of small-pox. The 971 deaths from all causes in London were 86 below the number in the previous week, and were equal to an annual death-rate of 11·2 per 1000. The deaths referred to diseases of the respiratory system, which had been 131, 127, and 117 in the three preceding weeks, were 111 last week, and were 4 below the number in the corresponding week of last year.

Of the 3807 deaths from all causes in the 95 towns last week, 173 resulted from different forms of violence, and 352 were the subject of coroners' inquests. The causes of 30, or 0·8 per cent., of the deaths registered were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London, West Ham, Bristol, Nottingham, Bradford, Newcastle-on-Tyne, and in 72 other smaller towns. The 30 uncertified deaths included 6 in Liverpool, 3 in Birmingham, and 3 in St. Helens.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, with an aggregate population estimated at 2,182,400 persons in the middle of this year, 1116 births and 547 deaths were registered during the week ended July 27th. The annual rate of mortality in these towns, which had been 13·4 and 13·6 per 1000 in the two preceding weeks, fell to 13·1 per 1000 during the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 13·7 per 1000, against 11·3 per 1000 in the 95 large English towns during the same period. Among the several Scotch towns the annual death-rates last week ranged from 4·7 in Ayr, 6·9 in Govan, and 7·8 in Kirkcaldy, to 14·6 in Glasgow, 17·3 in Perth, and 17·7 in Dundee.

The 547 deaths from all causes were 20 fewer than the number in the previous week, and included 66 which were referred to the principal epidemic diseases, against 50 and 54 in the two preceding weeks. Of these 66 deaths, 12 were referred to measles, 31 to infantile diarrhœal diseases, 13 to whooping-cough, 4 to diphtheria, 3 to scarlet fever, and 3 to enteric fever, but not one to small-pox. The 66 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·6 per 1000, against 1·3 in the 95 large English towns. The deaths attributed to measles, which had been 18, 16, and 5 in the three preceding weeks, rose again last week to 12, and included 4 in Partick and 3 in Dundee. The deaths of infants under 2 years of age referred to diarrhœa and enteritis, which had been 13, 16, and 23 in the three preceding weeks, further rose to 31 last week; 20 deaths were registered in Glasgow, 4 in Edinburgh, 2 in Greenock, and 2 in Coatbridge. The fatal cases of whooping-cough, which had been 15, 9, and 19 in the three preceding weeks, were 13 last week, of which number 2 occurred in Glasgow, 2 in Aberdeen, and 4 in Dundee. Of the 3 deaths from enteric fever, 2 occurred in Glasgow, in which town 2 of the fatal cases of scarlet fever also were registered.

The deaths referred to diseases of the respiratory system in the 18 Scotch towns, which had been 69, 61, and 66 in the three preceding weeks, were 59 last week; 16 deaths were attributed to different forms of violence, against 30 and 27 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons at the middle of this year, 586 births and 337 deaths were registered during the week ending July 27th. The annual rate of mortality in these towns, which had been 15·7 and 14·5 in the two preceding weeks, rose to 15·2 per 1000 in the week under notice. During the first four weeks of the current

quarter the mean annual death-rate in these Irish towns averaged 14·8 per 1000; in the 95 large English towns the corresponding death-rate was 11·3 per 1000, while in the 18 Scotch towns it was equal to 13·7 per 1000. The annual death-rates in the several Irish towns last week were equal to 11·5 in Dublin (against 11·2 in London), 15·6 in Belfast, 13·6 in Cork, 8·9 in Londonderry, 16·3 in Limerick, and 17·1 in Waterford, while in the 16 smaller towns the mean annual death-rate was 17·5 per 1000.

The 337 deaths from all causes in the 22 Irish towns were 16 more than the number in the previous week, and included 33 which were referred to the principal epidemic diseases, against 27, 26, and 34 in the three preceding weeks; of these 33 deaths, 11 resulted from diarrhœal diseases, 8 from measles, 7 from whooping-cough, 5 from diphtheria, 1 from scarlet fever, and 1 from enteric fever, but not one from small-pox. These 33 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·5 per 1000, or 0·1 less than that in the 18 Scotch towns; in the 95 large English towns the annual death-rate from these diseases last week was equal to 1·3 per 1000. The deaths attributed to diarrhœa and enteritis, which had been 6, 11, and 17 in the three preceding weeks, fell to 11 last week, and were all those of infants under 2 years of age; 8 deaths were recorded in Dublin, but not more than one in any other town. The deaths referred to measles, which had been 9, 9, and 10 in the three preceding weeks, were 8 last week, and included 7 in Dublin and 1 in Belfast. The fatal cases of whooping-cough, which had been 8, 3, and 5 in the three preceding weeks, were 7 last week, and included 2 in Newry. Of the 5 deaths from diphtheria, 3 occurred in Dublin.

The deaths referred to diseases of the respiratory system in the 22 Irish towns, which had been 47, 55, and 37 in the three preceding weeks, fell to 33 in the week under notice. Of the 337 deaths from all causes, 103, or 30·6 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 19, or 5·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 95 large English towns the proportion of uncertified causes of death did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: H. W. G. Doyne to the *Exmouth*, and for general staff duties; and O. W. Andrews to Devonport Dockyard. Staff-Surgeons: J. S. Dudding to the *Irresistible;* R. B. Scribner to the *Queen*, additional, for Second and Third Fleets; C. A. G. Phipps to the *Implacable;* B. R. Bickford to the *Vivid*, for Royal Naval Barracks; and N. B. V. Jacob to the *Carnarvon*. Surgeons: T. Creaser to Chatham Hospital; C. M. R. Thatcher to the *Endeavour*, on commissioning; H. A. Browning to the *Leander;* G. A. Jackson to the Royal Marine Depôt, Deal; and C. F. Bainbridge to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors are placed on retired pay (dated July 27th, 1912):—Charles W. Reilly, Reginald F. E. Austin, Nicholas Marder, Frederick G. Faichnie, and Alexander J. Chambers.

Colonel A. F. Russell, C.M.G., Deputy Director of Medical Services, His Majesty's Forces in Egypt, has arrived home on leave of absence. Lieutenant-Colonel H. S. McGill, on completion of a tour of service in the Ninth (Secunderabad) Division, Southern Army, India, has been appointed to the Aldershot Command for duty.

Major P. H. Collingwood has taken up duty at the Military Hospital, Devonport, on transfer from Crownhill. Major F. W. Begbie, at present serving at Colchester, has been placed under orders for service abroad during the coming trooping season. Major A. E. C. Keble, on arrival home tour expired from Gibraltar, has been appointed for duty in the Scottish Command as Deputy Director of Medical Services, Highland Division. Major A. E. Smithson has taken up duty in the Dublin District on transfer from Pietermaritzburg. Major J. W. Leake, in charge of the Military Hospital at Mount Auriol, has arrived home on leave of absence from Sierra Leone. Major J. P. Silver has taken over charge of the Military Hospital at Arbor Hill, Dublin. Major R. A. Cunningham, at present holding charge of the Bacteriological Research Laboratory in the Allahabad Brigade, has been selected for appointment as Officiating Specialist Sanitary Officer, Seventh (Meerut) Division, during the absence on privilege leave of Major P. S. Lelean. Major C. H. Furnivall has taken up duty at the Military Hospital, Secunderabad. Major A. A. Seeds, on arrival in India for a tour of service, has been appointed to the Third (Lahore) Division, Northern Army, for duty at the Station Hospital, Kasauli.

Captain H. A. Bransbury, specialist in dermatology and venereal diseases, has been appointed to the charge of the Brigade Bacteriological Research Laboratory at Ahmednagar. Captain E. G. Ffrench, lately holding charge of the Cantonment General Hospital at Ahmednagar, has been transferred from the Sixth (Poona) Division to the Ninth (Secunderabad) Division. Captain H. H. Leeson has been transferred from the Military Hospital at Cairo to Alexandria. Captain J. S. Dunne, on return from a tour of service at Agra, United Provinces, has been appointed for duty to the Royal Herbert Hospital at Woolwich. Captain M. J. Cromie has been appointed Senior Medical Officer at the Royal Artillery Camp, Glen of Maal, Wicklow. Captain A. G. Cummins has arrived home on leave of absence from the Egyptian army. Captain W. D. C. Kelly, specialist in operative surgery at the Royal Infirmary, Phœnix Park, Dublin, has been placed under orders for service abroad during the coming trooping season. Captain H. E. Priestley, on completion of a tour of service at Gibraltar, has been appointed for duty in the Southern Command. The following officers have been selected to attend the next promotion course at the Royal Army Medical College: Captains A. D. Fraser, H. N. J. Perry, L. A. A. Andrews, and V. T. Carruthers. Captain R. N. Woodley has taken up duty at Cardiff as Adjutant of the Royal Army Medical Corps School of Instruction in the Welsh Division. Captain J. A. B. Sim, on arrival home for duty from Bermuda, has been appointed to the Scottish Command for duty at the Military Hospital in Edinburgh.

Lieutenant W. T. Graham has been transferred from the Military Hospital at Tidworth to hold medical charge at Rollestone Camp, Salisbury Plain.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel P. J. Lumsden, agency surgeon, second class, Bengal Presidency, has been appointed, on return from furlough, as Residency Surgeon at Hyderabad. Lieutenant-Colonel C. Duer has arrived home on leave of absence from India. Lieutenant-Colonel D. T. Lane has relinquished charge of the duties of superintendent of the Sialkot District Jail. H.E. the Governor of Bombay in Council has been pleased to appoint Lieutenant-Colonel L. F. Childe to officiate as Principal of the Grant Medical College, Bombay, during the absence on leave of Lieutenant-Colonel C. H. L. Meyer.

Major R. H. Maddox has been appointed Civil Surgeon at Gaya. Major H. Boulton has taken up duty at Nowshera in charge of the Bacteriological Research Laboratory at Brigade Headquarters. Major J. N. Walker, civil surgeon at Rae Bareli, has been transferred to Gorakhpur as Civil Surgeon during the absence on leave of Lieutenant-Colonel R. J. Marks. Major G. Browse has arrived home on leave of absence from India. Major H. Austen-Smith, civil surgeon and principal of the Medical School at Agra, has taken up duty at Simla East as Civil Surgeon. Major B. Ainsworth has arrived home on leave of absence from India.

The services of Captain C. H. Bubbar have been placed temporarily at the disposal of the Government of the United Provinces of Agra and Oudh. Captain J. Masson has been appointed Civil Surgeon at Darbhanga. Captain R. Knowles, senior medical officer at Jhansi, has assumed civil medical charge of the Jhansi District during the absence of Captain H. W. Illius. Captain F. W. Sumner, civil surgeon at Farrukhabad, has been granted privilege leave combined with furlough for a total period of seven months. The services of Captain H. G. S. Webb have been placed at the disposal of the Government of the Punjab for employment in

the Sanitary Department. Captain S. W. Jones has taken up duty at Ahmedabad as Officiating Superintendent of the Central Prison in succession to Major C. S. Lowson. Captain J. W. H. Babington has been granted six months' extension of his leave of absence home from India. The services of Captain E. J. C. McDonald have been replaced at the disposal of the Government of India in the Home Department on relief by Captain C. A. Godson. Captain F. C. D. Fawcett has been granted three months' leave of absence. Captain F. M. White has been appointed to officiate as Director of the Bombay Bacteriological Laboratory. Captain B. Higham has been selected for appointment as Chemical Analyser for Hyderabad, Sind, and Medical Officer of Health for the Port of Karachi. The services of Captain E. T. Harris have been placed at the disposal of the Government of Burma. Captain G. W. Maconachie has been appointed to the charge of the Central Jail at Vizagapatam. The transfer of Captain W. D. Ritchie from Dhubri to Sibsagar by the Government of Eastern Bengal and Assam has been cancelled. Lieutenant G. R. Lynn has been appointed to officiate as an Agency Surgeon of the Second Class and posted as Residency Surgeon at Hyderabad. The Secretary of State for India has granted Lieutenant A. MacD. Dick an extension of leave of absence from India for four months on medical certificate.

TERRITORIAL FORCE.

Royal Army Medical Corps.

London Mounted Brigade Field Ambulance, Royal Army Medical Corps: Captain John Herbert Dixon, from the Welsh Border Mounted Brigade Field Ambulance, Royal Army Medical Corps, to be Captain (dated July 1st, 1912).

2nd West Lancashire Field Ambulance, Royal Army Medical Corps: Major William Thomas Blackledge, from the list of officers attached to units other than medical units, to be Major (dated July 27th, 1912).

1st North Midland Field Ambulance, Royal Army Medical Corps: Major William J. Reid to be Lieutenant-Colonel (dated June 1st, 1912).

1st South Midland Field Ambulance, Royal Army Medical Corps: Captain Cyril R. Lunn resigns his commission (dated July 27th, 1912).

2nd Northumbrian Field Ambulance, Royal Army Medical Corps: Captain George G. Farquhar resigns his commission (dated July 27th, 1912).

2nd Welsh Field Ambulance, Royal Army Medical Corps: Percy Wheeler Kent to be Lieutenant (dated June 11th, 1912).

3rd Wessex Field Ambulance, Royal Army Medical Corps: Captain Alexander Milne-Thomson to be Major (dated April 11th, 1912).

2nd London (City of London) General Hospital, Royal Army Medical Corps: Major (Honorary Captain in the Army) Ernest J. G. Berkley resigns his commission (dated July 27th, 1912).

1st Northern General Hospital, Royal Army Medical Corps: Captain Thomas Gowans, from the list of officers whose services will be available on mobilisation, to be Captain in the permanent *personnel* (dated April 1st, 1912). Captain Thomas Gowans to be Major (dated April 1st, 1912). Captain James Willie Heslop, from the 1st Northumbrian Field Ambulance, Royal Army Medical Corps, to be Captain, whose services will be available on mobilisation (dated May 31st, 1912).

Attached to Units other than Medical Units.—Captain Arthur C. Hartley to be Major (dated Jan. 31st, 1912).

The undermentioned Captains resign their commissions (dated July 27th, 1912):—Walter Fitzpatrick and Frederic W. Longhurst.

"THE MILITARY SURGEON."

The *Military Surgeon* (Washington, D.C., U.S.A.) for July is exclusively concerned with the many problems of the medical service of the army. It is shown that a larger medical *personnel* is required in the American army, which had not enough spare officers and men to fit out as prescribed the single manœuvre division in Texas last year, with a consequent hampering of its medical services. Further, it is held that the medical corps must have its own ambulances, supply wagons, horses, farriers, &c, and in its charge in peace time; for military surgeons must be officers as well as surgeons, and, indeed, officers with thorough understanding of war more than surgeons, to diminish the enormous waste of men that goes on through the hospitals in war—waste of men who, if not absolutely feigning disease to get out of war and on to the pension list, are often faint-hearted and ready to escape hardships and dangers, and particularly by the medical avenue of escape, which affixes no stigma, if that is made smooth for them by a too kindly easiness of the young surgeon or untrained civil surgeon who sees them when first they complain and puts them on the sick list, where they have leisure to deepen the shadows of their indefinite disabilities. The other duties of the military medical officer in relation to gunshot wounds and sanitation are discussed, and there seems to be some hope that as typhoid vaccination has proved so striking a benefit to the army it may become widespread in civil life in the United States. Major E. L. Munson concludes his striking article on the wastage of the Federal army in the Rebellion. In 1863 one man in every six was discharged as physically unfit, 14,000 of them for "debility" merely. Military officers came to have so little confidence in the *savoir faire* of their medical colleagues that a field officer was made a member of all discharge boards in general hospitals. It was the untrained civil surgeons who lost the medical officers their credit, and the author insists that every medical man doing duty with troops shall be taught from the first that his most important duty is to the army, not the individual; to the army to keep its men at duty, doing perhaps an injustice to an individual that can be corrected next day, but in the general case doing far greater good to the mass of the men of the army by keeping that army together, finishing the war the sooner, and letting them all the sooner get home. A thoughtful article which every junior officer, and most senior officers, medical or combatant, will read with profit. Major George A. Skinner, Medical Corps, U.S. Army, reports 17 cases of gonorrhœal epididymitis treated by the operation of Hagner of Washington, laying open the tunica vaginalis and puncturing the epididymis for relief of abscesses or cysts. Patients were at once relieved of pain and were about on the fourth day. An article by Dr. Vollbrecht Bey, of the German Army Medical Corps, is translated. He describes his organising the new Turkish Army Medical Corps. He says that Turkey "improvises quickly and easily," and that "the Turkish soldier is very clever, adapts himself quickly, and always does the right thing. He works better as a litter-bearer without commands than with them," just like the British seaman, we would add. A story is told of a Russian who feigned complete deafness, but awaked from sound sleep when his name was called. There used to be a story of another deaf soldier who gave no sign even when a pistol was fired by his ear, but when asked in a conversational voice by the impatient surgeon, "Did you hear that?" answered with conviction "No."

INDIAN MEDICAL SERVICE EXAMINATIONS.

A competition for Commissions in his Majesty's Indian Medical Service was held at the Royal Army Medical College and at the Examination Hall, Victoria Embankment, on July 22nd to 27th. The following are the names of the successful candidates, arranged in order of merit:—

	Marks.
John Dykes Wilson, M.A., M.B., Ch.B. Edinburgh, Edinburgh University	3718
Laurence Alfred Pelham Anderson, B.A., B.C. Cantab., Cambridge University and St. George's Hospital	3519
William Calder Paton, M.A., M.B., Ch.B. Edinburgh, Edinburgh University	3481
James Bennett Hance, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and Guy's Hospital	3389
Stephen Gordon, B.A., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and London Hospital	3316
Graham Yalden Thomson, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Guy's Hospital	3274
Harold Kirkby Rowntree, M.B., B.S. Lond., L.M.S.S.A., Middlesex Hospital	3268
Basil Franklin Eminson, M.B., B.S. Lond., Charing Cross Hospital	3216
Anthony Kennedy, B.A., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and Middlesex Hospital	3186
Jordan Constantine John, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital	3172
Sorab Dhunjibhoy Ratnagar, B.A., L.M. & S., L.R.C.P. & S., L.F.P. & S. Glasg., London Hospital	3157
Colin McIver, M.R.C.S., L.R.C.P., University College Hospital	3068

Correspondence.

"Audi alteram partem."

AN APPEAL TO SYMPATHISERS IN EUGENICS.

To the Editor of THE LANCET.

SIR,—The widespread interest aroused by the International Congress makes this an opportune moment to appeal for support for the Eugenics Education Society—an appeal for which we trust you will afford space. Every additional recruit, by joining that society, undoubtedly adds to its financial strength and to its prestige. But, highly desirable as is such an increase of numbers, all our needs are unlikely thus to be met; for an additional expenditure of at least £500 a year is essential in order to render possible what is now immediately and urgently required in the way of additional office accommodation, secretarial assistance, and educational lectures. Surely some of our wealthy and generous fellow-countrymen must see the necessity of establishing the Eugenic movement on a permanent basis in order to ensure the progress of the nation—if not to guard against an actual retrograde movement. To them shall we appeal in vain? Contributions should be sent to the honorary treasurer.—We are, Sir, yours faithfully,

LEONARD DARWIN, President.
S. GOTTO, Honorary Secretary.
P. VON FLEISCHL, Honorary Treasurer.

6, York Buildings, Adelphi, London, W.C., July 30th, 1912.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Although I am not yet in receipt of a full report of the proceedings of the British Medical Association meeting at Liverpool, whose decisions may considerably lessen the friction between the Brighton Division and myself, it is, I think, advisable to make my position clear, and therefore I would ask you to favour me by publishing this letter in THE LANCET.

I would first deal with the question of my position in regard to the undertaking. As you are aware, the undertaking is as follows:—

> I, the undersigned, hereby undertake that in the event of the National Insurance Bill becoming law, I will not enter into any agreement for giving medical attendance and treatment to persons insured under the Bill, excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association, and that I will enter into such agreement only through a local Medical Committee, representative of the medical profession in the district in which I practise, and will not enter into any individual or separate agreement with any approved society or other body for the treatment of such persons.

I signed this undertaking in September, 1911. At that time medical benefit was the only subject under discussion. I sympathised with the general practitioners in this matter, as it is well known that in club practice, if a sufficient fee is not paid, the standard of medical work is lowered, the result being that both the practitioner and the public suffer. When I was asked to sign the undertaking I read it carefully over and concluded that it was meant to prevent general practitioners competing for practice under the Act at unsatisfactory rates. That being so, I had no hesitation in showing my sympathy by signing the undertaking; in case, however, that I did not fully grasp its meaning, I, at the time of signing, explained to one of the honorary officials that I did so on the understanding that my position as a public official was not prejudiced. There is an independent witness who can corroborate this statement. On telephoning to the local secretary regarding my undertaking he volunteered the information that he had it "at the back of his mind," indeed, he was almost certain, that when I signed the undertaking I added a limiting clause regarding my official duties. Such a limiting clause was not added in writing, but the local secretary's recollection confirms the verbal understanding.

At a meeting of the Brighton Division held on July 9th, I explained my present public duties to consumptives—viz., treatment at the sanatorium and tuberculin treatment at the town hall. I also stated that under the Sanatorium Benefit Clauses, payments would be made to the town council by the Local Insurance Committee. After hearing my statement the Division passed resolutions recognising that the medical officer of health was not bound by the undertaking. No one could mistake the meaning of the resolutions, which were as follows:—

> 1. That until the seven cardinal principles of the British Medical Association are granted to the satisfaction of the Representative Meeting no registered medical practitioner should give any assistance whatever towards bringing sanatorium benefits or any other benefits of the National Insurance Act into operation either by assistance on Committees, by means of certificates, medical attendance, examinations, or otherwise. *Rider.*—That the foregoing resolution shall not preclude any medical officer of health from continuing to perform his present public duties.
>
> 2. That until the six cardinal principles of the B.M.A. are granted to the satisfaction of the Representative Meeting no registered medical practitioner, excepting whole-time medical officers of health, should give any assistance whatever toward bringing sanatorium benefits or other benefits of the National Insurance Act into operation either by assistance on committees, by means of certificates, medical attendance, examination or otherwise, but that whole-time medical officers of health should not act on any committee appointed under the Act.

On July 11th I advised the town clerk that the Brighton Division of the B.M.A. had approved of my continuing my present duties under the sanatorium benefit clauses. Later, on the same day, the town clerk informed the Local Insurance Committee that our existing arrangements would be continued for the treatment of tuberculosis under the sanatorium benefit clauses.

On the following Tuesday, at a meeting of the Brighton Division, to which all practitioners resident in the area were invited, it was held that the second resolution was passed in error. The first resolution was reaffirmed but the rider was omitted. The following additional resolution was passed:—

> That this meeting calls upon Dr. Forbes to act in accordance with the terms of the undertaking signed by him.

I proposed to the meeting as an amendment that I should act according to the spirit of the pledge as I understood it at the date I signed it, but I was told that it was for the meeting to interpret the meaning of the pledge. On this point I differ absolutely from the meeting. It is the spirit in which a pledge is given that should bind any man of honour, and I propose to fulfil my pledge accordingly.

In all my relations with the Association I have always quite freely let my position be known. I have also given every assistance in clearly representing to the local authority the views of the Association, however widely they might differ from my own. Up to a few months ago I thought that that was all that was expected from public officials. I thought that it was recognised that the first duty of a public official was to advise and assist public bodies in the manner he judged most likely to promote the efficiency of their administration. I now gather from the Brighton Division that the public official who remains a member of the Association must follow any policy laid down by that body, and must not assist his council in carrying out any alternative policy in conflict therewith. For instance, on my advice the education committee proposed to appoint whole-time men for medical inspection and treatment. The Association blacklisted the advertisement. As a servant of the education committee it was my duty to see that there were sufficient suitable candidates from whom to make a selection. It was also my duty to lay fully before the candidates the views for and against their accepting the appointment. My conduct in the matter is at present challenged by the Brighton Division. Again, with reference to the working of the sanatorium benefit clauses, the Brighton Division wished me to refuse to do work which is included in the comprehensive list of my duties, in order that my council might be embarrassed in carrying out their legal obligations.

In other divisions of the Association it would appear that the duties of the official to his council and the duty of a council to the Government are more fully recognised. I judge of this from having communicated with the medical officers of health of 14 towns and counties which give sanatorium treatment to consumptives in their fever hospitals. Although in 11 of these arrangements for the treatment of consumptives were being made or had been made by the Local Insurance Committee with the councils, the Association had not questioned the procedure in any one case.

Whatever the opinion of the parent body may be, however,

it is impossible for me to remain a member of the Association so long as the Brighton Division does not recognise that public officials must remain free agents if they are to serve their councils whole-heartedly, and to carry out the duties for which they are paid. It is for this reason that I have asked the secretary of the division to forward my resignation to the central office. I am, Sir, yours faithfully,

DUNCAN FORBES,
Medical Officer of Health.

Health Department, Town-hall, Brighton, July 26th, 1912.

FLEMING'S (HECHT'S) MODIFICATION AND THE WASSERMANN TEST.

To the Editor of THE LANCET.

SIR,—In view of the interesting discussion on the comparison between Fleming's modification and the Wassermann test which is going on in your columns, it would seem desirable that various workers should state their experiences so that some definite conclusion may be come to on the points at issue. Fleming's modification has been the routine method of investigation at the Seamen's Hospital, where 35 beds out of a total of 250 are devoted exclusively to the treatment of venereal diseases. In addition, an unusually large number of patients suffering from the various manifestations of syphilis present themselves for treatment in the out-patient department. The material derived from these sources is therefore considerable. Further, the clinical condition has been observed by me in practically every case, and in the wards the course of the disease and the effect of treatment have been carefully followed. Cases of leprosy, malaria, and many other tropical diseases have been examined. In no case has a positive result been obtained in any other condition than syphilis. The percentage of sera which fail to hæmolyse is found to be 5 per cent., as has been reported to you recently by Dr. Panton and Dr. Braxton Hicks.

Various modifications of the original Fleming's technique have been adopted from time to time—e.g., the human heart extract standardised against a number of known syphilitic sera is now used in a much lower dilution than 10 per cent., usually 2–3 per cent. Thanks to the valuable observation made by Dr. d'Este Emery, the whole process is now carried on in a water-bath. Good results, in fact, may often be obtained by adding the sheep's blood to the tubes after a short delay at ordinary room temperature, thus doing away with the necessity for heating to 37° C. for five minutes in the first stage; this, however, has not been put to a sufficiently lengthy series of tests as yet to justify its use as a routine method.

A critical examination of the results obtained has convinced me that if fresh sera be used and care be taken Fleming's modification is a very accurate, reliable, and therefore valuable qualitative method of investigating complement fixation.—I am, Sir, yours faithfully,

ARTHUR DAVIES.

London School of Clinical Medicine (Post-Grad.), Seamen's Hospital, Greenwich, S.E., July 23rd, 1912.

To the Editor of THE LANCET.

SIR,—May I assure Mr. Donald that I have more than glanced at his article, and that I am very far from entertaining ungenerous suspicions of him and his work? In spite of his disclaimer I still believe the explanations I have offered for the discrepancies between his results and Mr. Fleming's may be the correct ones, as they are certainly possible theoretically. Two observers may honestly believe they are carrying out a complicated technique like the Wassermann reaction exactly similarly, but unless the process has been described in the utmost detail, small but important differences may creep in. One may centrifugalise his corpuscles to constant volume, another may not; one may accept any antigen which gives a negative result with a normal serum and a positive one with a syphilitic serum, another may test it still further, and so on. My explanation is a possible one. Can anyone suggest an alternative?

I am, Sir, yours faithfully,

Harley-street, W., July 28th, 1912. W. D'ESTE EMERY.

THE OPHTHALMOLOGY OF GENERAL PRACTICE.

To the Editor of THE LANCET.

SIR,—I am very glad to obtain the assurance of Mr. M. L. Hepburn in THE LANCET of July 27th that in his opinion "those medical men who wish to supplement their incomes by undertaking refraction cases" may do so. This is the whole point, and I am now satisfied; but I submit that neither they nor I could have gathered this from Mr. Hepburn's original article. Hence I protested.

To obtain such an admission from Mr. Hepburn is no mere point of academic interest, but one of urgent and practical importance, because not only are general practitioners already, in a few districts, treating the defective eyesight of London County Council school-children, and being paid out of public funds for doing so, but are hoping in the near future for a very great extension of this principle,

I am, Sir, yours faithfully,

ALEXANDER BROWN, M.B. Lond.

Bartholomew-road, N.W., July 28th, 1912.

THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—The annual circular for the Medical Directory will be posted to the profession on August 1st. We sincerely hope that all practitioners will make their returns to us as quickly as possible, so that the issue for 1913 may be accurate and full of the latest information.

We shall as usual publish a few days before Christmas, and we seek the hearty coöperation of the profession in making this effort.—We are, Sir, yours faithfully,

J. & A. CHURCHILL.

Great Marlborough-street, London, W., July 27th, 1912.

THE RARITY OF SARCOMA OF THE RECTUM.

To the Editor of THE LANCET.

SIR,—In the Address in Surgery at the recent annual meeting of the British Medical Association, Mr. F. T. Paul, referring to the rarity of sarcoma of the rectum, reported but a single case as occurring in an experience extending over 30 years.

Two years ago, when reporting a case of sarcoma of the rectum under my care, I had occasion to search the literature for recorded cases, of which, excluding the melanotic variety, only nine undoubted cases were found. Inquiries at 50 of the principal hospitals and museums of the British Isles produced only two cases. An epitome of the above nine cases appeared in the *Journal of Pathology and Bacteriology*, vol. xv., 1911. A few reprints of this article are still in my possession, and I shall be glad to supply a copy to any medical man who is interested in this class of case. I am, Sir, yours faithfully,

C. HAMILTON WHITEFORD.

5, Sussex-terrace, Plymouth, July 30th, 1912.

THE REBATE ON PETROL DUTY FOR MEDICAL MEN.

To the Editor of THE LANCET.

SIR,—Since the introduction of the petrol duty it has been the rule for the Board of Customs and Excise to insist on doctors signing the claim for repayment of duty in the presence of the taxing officer. This has necessitated doctors attending at the nearest taxing office, generally at some extremely inconvenient hour, in order to sign a declaration which entitles them to a small sum of money. This was a tiresome and vexatious regulation, and some time ago I approached the legal committee of the Royal Automobile Club and requested them to take steps in the matter to get this altered. As the result of their negotiations a letter was received by the club on July 6th stating, among other things, that the Board of Customs and Excise "recognised that the regulation might cause inconvenience in certain cases, and for this reason no objection would be raised in future to members of the public, who so desired, being relieved of the

necessity of having their claims to rebate witnessed by an officer."[1]

This, I take it, means that any doctor who chooses to apply to the local taxing officer will be allowed to sign his declaration for rebate in the presence of any suitable witness, instead of, as heretofore, having to go to the taxing officer for the purpose.

I have ventured to write you this letter in order that medical men who may not happen to read the *Royal Automobile Club Journal* may be able to avail themselves of the advantages obtained for them by the Royal Automobile Club.

I am, Sir, yours faithfully,

P. LOCKHART MUMMERY.

Cavendish-place, W., July 24th, 1912.

AN APOLOGY FOR SILENUS.

To the Editor of THE LANCET.

SIR,—Those who know the Louvre will recollect the bronze antique, in the Collection Thiers, that purports to be a statuette of Silenus, and is excellently pictured in Richer's "L'Art et la Médecine." The Phrygian deity is usually represented, by moderns at any rate (Rubens, to wit), as a fat little old man with a bald head. But in this case he appears as an obese person whose body and limbs are those of a perfectly proportioned, and attractive though chubby, child, while the head is that of an adult, and so about a "fourth" instead of the usual "seventh." Hair is represented on the face and scalp, but there is none on the pubes, while the genitals are infantile.

Richer, at the time he wrote his book, seems to have been puzzled, for he says that the figure seems not to be either that of myxœdema or of ordinary obesity, but that of an incomplete and abnormal being. Certainly, a few years ago the statuette must have seemed the offspring of the sculptor's fancy rather than of his observation; but to-day it clearly stands for the representation of a case of dyspituitarism, with genital infantilism and obesity, of the type that, since Cushing's very latest work, we must associate with insufficiency or disturbance of the posterior lobe. The extreme fidelity of the artist is shown by his recognition of the fact that the face may be hairy while the pubes is bare. But incidentally, Silenus's thirst is to be explained. Obviously there was polyuria—and polydipsia. "Tout comprendre est tout pardonner."

I am, Sir, yours faithfully,

Welbeck-street, W., July 25th, 1912. F. G. CROOKSHANK.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Kincardine and the Provision of Sanatoriums.

AT a meeting of the Kincardineshire county council held on July 25th Dr. W. A. Macnaughton, the medical officer, reported upon the Local Government Board's recommendation on the requirements of the county area with regard to the prevention, detection, and treatment of tuberculosis. In respect of the existing means in the county for the treatment of tuberculosis: (*a*) there were no beds available in existing institutions; (*b*) no dispensary or out-patient departments; (*c*) no medical or nursing staff for home attendance or visitation. During the ten years 1902–11, the average number of deaths from phthisis was 29·5, in addition to which there was a further considerable mortality due to other forms of tuberculosis, no fewer than 105 deaths being registered within the whole county in the said ten years owing to that cause. This gives a total of 400 deaths due to all forms of tuberculosis during the ten years 1902–11 among all classes and at all ages, or an average of 40 deaths per annum. Sanatorium treatment has hitherto been mainly carried out with phthisical cases, and assuming that, according to Dr. A. Newsholme's estimate, the number of cases of phthisis requiring active treatment in any year is three times the number of deaths, there will be on an average 88 cases of phthisis requiring to be dealt with in the course of each year. The Departmental Committee on Tuberculosis considers that it is advisable to provide in the immediate future 1 bed per 5000 of the population. For the purposes of this Act the population of the county may be taken as 30,000, and the minimum number of sanatorium beds immediately required for curative purposes according to this recommendation is therefore six. Prolonged residence in a sanatorium is not contemplated, and the stay of the patient therein is mainly for educative purposes, and need not exceed two or three months. In this way something like 36 patients might receive instruction in the course of a year in the hygiene of the treatment. Dr. Macnaughton submits the following outlines of a scheme of completely correlated administrative action against tuberculosis: 1. A tuberculosis officer at an estimated salary of £250 per annum, whose duty would be to organise the methods of detecting and treating the disease. Dr. Macnaughton submits that such an officer should be appointed as assistant medical officer of health for tuberculosis purposes. He should have rooms in the more populous centres, where periodic visits can be made, and where patients can be examined and advised. Such seems to be the best form of dispensary for the area. 2. As to sanatorium, Dr. Macnaughton suggests that, as the Departmental Committee on Tuberculosis strongly advises that an individual sanatorium should not contain fewer than 100 beds, and that there should be a residence for a medical officer, the county should enter into a combination with other counties and boroughs for sanatorium benefits. Estimating the cost of maintenance per bed per week at 30*s*., and assuming that six beds are occupied continuously during the year, the cost of sanatorium treatment will be £468. 3. Shelter huts. Under suitable conditions, and where garden or other ground is available, home treatment may be, in all respects, sanatorium treatment. For the rural districts in the area this form of treatment appears especially applicable and desirable, and in Aberdeenshire there are now 20 shelters, at least, in use with very satisfactory results. It is estimated that ten shelters, to begin with, will be required under the scheme. At £15 each these shelter huts would cost £150. A grant in aid may be available for this purpose from the proportion allocated to Scotland of the £1,500,000 set aside for sanatoriums. 4. Hospital accommodation for advanced cases should be provided apart from the sanatorium. Within the grounds of the present isolation hospital at Stonehaven a separate pavilion for such cases could be erected. A wood and iron structure would suffice. As adequate ventilation would be provided it is not necessary to have as large a cubic space per patient as for other infectious diseases. A pavilion containing six beds (three for males and three for females), with administrative and other offices, is estimated to cost £600. A grant in aid for this purpose might be obtained from the £1,500,000 previously mentioned. One nurse (salary £30) and one probationer (salary £15) would be required. The special committee appointed to deal with the matter reported that in view of the attitude of the profession there might be some difficulty in getting medical men to work the scheme. Assuming that medical men were available, the committee recommended that ten beds instead of six should be provided, and that arrangements should be made for the work to be done by the medical officer of health and the school medical officer, who would be appointed assistant medical officer for the purposes of tuberculosis. The suggestion was also made that a joint sanatorium with the county of Aberdeen should be arranged.

Post-graduate Instruction at the Glasgow Royal Infirmary.

The autumn post-graduate classes at the Glasgow Royal Infirmary will commence in September. There will be 14 courses embracing not only clinical medicine and surgery and gynæcology, but nearly all the principal specialties.

St. Andrews University Court: the Inclusive Fee.

A meeting of the University Court of St. Andrews was held on July 25th, Principal Sir James Donaldson in the chair. The Court agreed to approve of the recommendation of the conference of representatives of the University Courts of St. Andrews, Glasgow, and Aberdeen, held at Perth on June 25th, on the subject of the proposed inclusive fees, and directed that this resolution be communicated to Lords and Commissioners of H.M.'s Treasury. In accordance with the suggestion of the conference, the court fixed the inclusive fee to cover the University instruction required by ordinance, other than the clinical course and the degree of M.B., Ch.B., at 90 guineas, and an inclusive fee for the clinical course at 40 guineas. These fees, it was resolved, should come into

[1] See Royal Automobile Club Journal, July 19th, 1912.

operation as regards all regular students of medicine who begin their course after Oct. 1st next.

University of Aberdeen : the Vacant Chairs.

The chairs of Medicine and Midwifery in the University of Aberdeen are at present vacant through the resignations of Professor D. W. Finlay and Professor W. Stephenson. For the chair of Medicine it is understood that Dr. A. H. Lister and Dr. Ashley W. Mackintosh, of Aberdeen, and Dr. C. O. Hawthorne, of London, are applicants. For the chair of Midwifery it is understood that Dr. R. G. McKerron, of Aberdeen, is a candidate.

Aberdeen School Board : Assistant Medical Officership.

At a meeting of the Aberdeen school board held on July 26th Dr. P. Sinclair Hunter was appointed assistant medical officer under Dr. G. Rose. There were five candidates. Dr. Hunter is a graduate in arts and medicine of the University of Aberdeen, where he also obtained the Diploma of Public Health. Recently Dr. Hunter has been acting as bacteriologist to the public health authorities of the city of Aberdeen and neighbouring counties.

Aberdeen Medical Corps in Camp.

The Aberdeen Corps (R.A.M.C.) are at present in camp at Banff. The corps left the city on the morning of July 25th by special train for Duff House, Banff. Colonel Kelly was in command. The corps, numbering about 230 men, was accompanied by their band of buglers and pipers. Macduff was reached about 11 o'clock, and here the men and officers detrained. At the Princess Royal Park everything was found to be in order, the advance party having arrived two days previously. The officers, 17 in number are quartered in the Fife Arms Hotel.

July 31st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

THE Local Medical Committee of the county borough of Dublin has made satisfactory progress in the organisation of the profession in regard to contract practice. Some 80 per cent. of the medical men resident in the city have signed a pledge in the same terms as that signed by the medical men of Belfast and published in THE LANCET last week. Only one or two have definitely refused to sign. Most of those still outstanding are absent on holidays or are out of practice, and not concerned with the question. The Local Medical Committee has been invited by the Insurance Committee to suggest conditions under which medical practitioners would be prepared to assist in the administration of the sanatorium benefit.

The Peamount Sanatorium.

Four men have been arrested and sent for trial on the charge of being concerned in the attack on the Peamount Sanatorium on July 22nd. The Celbridge guardians recently passed a resolution protesting against the erection of a sanatorium at Peamount, and forwarded a copy of it to Lady Aberdeen, as president of the Women's National Health Association. At their last meeting a reply was read from Lady Aberdeen in which she says :—

> I cannot help thinking that there must be some mistake as regards the position at Peamount, as you speak of a large population in the immediate neighbourhood. If you will consult an Ordnance map and a record of the population in the townland of Peamount and the three or four townlands around, you will find the population numbers one to 15 acres, and it would be hard to find any other district in Ireland which is so thinly populated as this. Galway, which is considered a thinly populated county, numbers one to every five acres. As regards the Crooksling Sanatorium, we understand its resources will be severely taxed by the demands made upon it by the city and county of Dublin, and that the buildings which are to be added there will all be needed for the city and county. You may have noticed in the newspapers that several experienced medical men have examined Peamount and the land attached to it, and express their opinion that it is eminently suitable for a sanatorium, and their opinion is also shared by Messrs. Kaye, Perry, and Ross in their professional capacity of sanitary engineers.

The Registrar-General's Report.

The number of deaths registered in Ireland during 1911 was 72,475, a death-rate of 16·6 per 1000, or 0·5 below 1910 and 0·8 below the average of the decennium 1901–10. From tuberculosis the number of deaths had fallen from 10,016 in 1910 to 9623—a decrease in ratio from 2·3 per 1000 in 1910 to 2·2 per 1000 in 1911, the lowest death-rate yet recorded for Ireland. This disease, however, is still at the head of the 22 principal causes of death in Ireland, with cancer as sixth. The cancer death-rate was 0·82 per 1000 as compared with 0·84 per 1000 in 1911. The births numbered 101,758. Of these, 52,448 were boys and 49,310 were girls, 106·4 boys to every 100 girls. The percentage of illegitimate births, 2·8 per cent., as has always been the case, bears favourable comparison with the returns for most other countries. The marriages registered numbered 23,473, a marriage-rate of 5·37 per 1000, showing an increase of 0·32 as compared with 1910.

The late Dr. James McIlroy.

The death occurred on July 28th, after two days' illness, of Dr. James McIlroy, at his residence, Ballycastle, county Antrim. The deceased, who was born 67 years ago at Bushmills, county Antrim, graduated M.B. of Glasgow University in 1867, and in the same year became L.R.C.S. Edin. He acted for a time as assistant to the late Dr. J. M'Caw, of Bushmills (a medical man greatly respected in North Antrim), and subsequently, for a period of 22 years, was dispensary medical officer of Castlequarter district of the Ballymoney union, residing at Lavan. In 1889 he was appointed dispensary doctor of Ballycastle district, a position he filled for 23 years. Fifteen years ago he was also appointed medical attendant to the Ballycastle workhouse. Last year he was obliged to resign both appointments on account of symptoms following injuries to his spine and neck, occasioned some years previously by a driving accident. He was medical attendant to the local Royal Irish Constabulary, and the Rathlin Island lighthouse, and a justice of the peace for county Antrim. He leaves a widow and four daughters to mourn their loss. Two of his daughters—Dr. A. Louise McIlroy and Dr. Janie H. McIlroy—are well known in the medical profession, one in obstetrics and gynæcology, the other in ophthalmic practice. Dr. McIlroy was a hard-working practitioner who was greatly respected by a large *clientèle* in Ballycastle and the surrounding districts of North Antrim. He was buried on July 30th in Ballycastle, his funeral being attended by a large concourse of friends and former patients.

Louth Tuberculosis Dispensary.

At a meeting of the Louth county council held in Dundalk on July 25th Mr. J. A. McQuillan, of Ardee, was appointed medical superintendent of the Central Tuberculosis Dispensary, at a salary of £400 per year, with £100 expenses.

Anatomy Appointment.

It is understood that Dr. J. Stuart Dickey, senior demonstrator in the Anatomy Department of Queen's College, Belfast, has been appointed professor of anatomy in London University, Ontario, Canada.

July 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Duodenal Ulcer.

ON July 17th, before the Société de Chirurgie, M. Pauchet discussed duodenal ulcer. He said that it was evidenced particularly by the occurrence some three to five hours after food of pains relieved by a further ingestion of food, and by subjective signs of gastric hyperacidity (pyrosis). Duodenal ulcer when acute or recent is curable by medical treatment, but the chronic duodenal ulcer, the recurring form, ought always to be operated on, for it threatens the life of the patient, or at least curtails his existence and paralyses his social life. The operation is, moreover, one of little danger in the hands of a trained surgeon. Gastro-enterostomy effects frequent and often definitive cures, but at the same time recurrence is common, for after the cure of the ulcer the pylorus begins again to function, and the passage of food laden with altered gastric juice lights up anew the healed ulcer. It is necessary, therefore, excluding cases of stenosis, to complete the gastro-enterostomy systematically by pyloric exclusion. Out of 21 patients operated on, three of them under spinal anæsthesia, the author had not a single death to record.

The Dangers of Coloured Toys.

The coloured toys used by children ought to be subjected

to strict regulation, and a close supervision should be exercised over the manufacture of these objects, otherwise their handling by children becomes a source of danger. Dr. Pierreson has drawn special attention to this subject by bringing forward the case of two children who have successively come under his care. The first had been playing with some coloured balls. Half an hour later, on putting its fingers into its mouth, the child was attacked with an erythema and some puffiness around the lips, and with intense swelling of the gums. These phenomena were accompanied by a violent burning sensation and by itching, which caused the child to cry. After washing the parts with boiled water the symptoms diminished and disappeared in about 20 minutes. Another child, after playing with the same balls, presented like accidents of equal intensity. The balls were found on examination to be coloured with lead chromate, a substance doubly dangerous on account of the association of the poisonous and caustic action of the chromic acid with that of the lead. But in the two cases cited the phenomena appeared to disclose another cause. The balls were made of compressed clay, covered with a layer of resin to fix the colour. It was this resin which, by adhering to the fingers, set up the symptoms in these cases.

A Frequent Variety of Senile Rheumatic Deformity.

M. Pierre Marie and M. Andre Léri on July 5th showed at the Société Médicale des Hôpitaux several patients attacked with a special deformity of the hand. This deformity consisted in a bony prominence of the back of the hand in its upper and outer part. It was generally oblong, elongated transversely. It might be raised about 2 cm., and have a superficies of from 4 to 5 cm. of breadth by 2 or 3 in length. This deformity is extremely frequent in the aged, although it has not hitherto been pointed out so far as the authors know. In the aged of the Salpétrière it is present in a very marked form in 4 per cent. of the cases, is pronounced in 12·5 per cent., and just indicated in nearly all subjects over 70 years, and often at an earlier age. This deformity is due to the projection of the second and third metacarpals and of the corresponding bones of the second row of the carpus (trapezium, trapezoid, and os magnum). Under the microscope all the alterations of chronic rheumatism are to be seen: congestion and inflammation of the synovial membrane, multiplication of the cartilage cells, with a fibrillar and granular condition of the ground substance, swelling of the bones with dilatation of the cancellous tissue filled with marrow, and thinning of the compact tissue. This swelling is entirely analogous to that produced in the phalanges in Heberden's or Bouchard's nodes; the seat alone differs, and the deformity described by the authors deserves in like manner to be called carpal nodes. Very frequently, moreover, it coincides with Heberden's or Bouchard's nodes, as well as with an analogous deformity of the foot, which may be called tarsal nodes.

July 29th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Neumann.

THE city of Berlin and the medical profession have to mourn the death of Professor Hugo Neumann, who died on July 12th from tuberculosis. Professor Neumann was born in Berlin in 1858, and after qualifying was for some years an assistant physician to the Moabit Hospital in Berlin. He then devoted himself to the study of the diseases of children. Coming of a well-to-do family, he founded out of his private means a policlinic for sick children which gradually became a model institute for the care of children. At the time of his death this institute, called the Kinderhaus, contained departments for the internal and surgical treatment of children, for diseases of the eyes and of the throat and ears, for nervous diseases, a dental and an orthopædic department, each under an experienced specialist. But his special care was for infants, so that his institute includes an asylum for lying-in women, where the mothers were obliged to nurse their own and other infants, a department for the training of children's nurses, and a dispensary for poor mothers. Professor Neumann was the author of works on the etiology of meningitis and broncho-pneumonia, and on the infection of the fœtus by the bacillus pyocyaneus. Of his well-known book "Letters to a Medical Man on the Diseases of Children," the fifth edition was lately published. His statistical publications on child-study are very numerous, especially those on illegitimate children and their future prospects, and on mentally deficient children. Professor Neumann was a man of enormous activity who devoted all his life to work; he was scarcely ever seen at a social gathering. When a few years ago the first symptoms of tuberculosis caused him to winter in Arosa, Switzerland, he was just as busy there as in Berlin, pursuing his researches on the influence of high altitude on children and on the mortality of infants in the canton of Grisons. He had a large practice as a consultant, but he could never be induced to go to a private consultation during the five to six hours he devoted daily to work for the poor and destitute children in his "Kinderhaus." Although the time of his funeral had not been published, hundreds of poor mothers with their children were present at it, evincing their gratitude to their benefactor.

Treatment of Malignant Growths in Animals.

Before the Berlin Medical Society Professor Neuberg, Professor Caspary, and Dr. Löhe recently reported their researches concerning the treatment of malignant growths in animals by certain metallic compounds. They had found metallic compounds which produced an autolysis of the growth without acting on the normal tissue. Subcutaneous injection proved somewhat ineffective, for while the growth became softer it still continued to grow. Intravenous injection, as suggested by Professor Wassermann in his researches on selen-eosin, proved more efficacious. The best results were obtained by a composition of copper, tin, platinum, cobalt, and silver. The effective quantity was different in each case, being 0·005 of platinum and 0·066 of cobalt for each gramme of a mouse weight. By microscopical examination it was proved that after an injection the metals were present in sublimated form within the growth. An effect was obtained in mouse cancer in nearly every case, and also in sarcoma of rats and in a case of adenocarcinoma of a dog. The action of the compounds is very quick; after a few minutes hyperæmia of the growth occurs, and on the following day a hæmorrhage is visible. The growth then becomes a flaccid sac with hard knots within. When another injection is made the knots gradually disappear and the wall of the growth becomes a thin transparent membrane. This membrane shrivels still further, and finally consists only of a rigid cord. There were some difficulties, as the effective dose came very near the lethal dose, and when the dose was lessened the growth sometimes did not disappear but rather showed an increase in growth. A section of the animals died from intoxication by the toxin produced by the autolysis which entered from the growth into the circulation. The injections were made into the tail, where the space is small and only a limited number of injections is possible, so that the treatment must be interrupted although some remains of the tumour are still present. Injections into the femoral vein were rather badly supported by the mice. By subcutaneous injection of iodide of sodium the remains of the growth became indurated and were discharged. The results of the authors' experiments are that certain compounds have a selective action on the cells of sarcoma and cancer in mice and rats whereby they are able to destroy them in a living animal. Although a great many of the members had already left Berlin for a holiday, the assembly room of the Langenbeck House was overcrowded notwithstanding the tropical temperature, and the address was listened to with great interest. The president, Professor Orth, in closing the meeting, said that the experiments of Professor Neuberg and his fellow workers, although at present merely of theoretical interest, emitted a ray of hope for the discovery of an efficacious treatment of malignant growths.

The International Congress of Obstetrics and Gynæcology.

The proceedings of this Congress will commence on Monday, Sept. 9th, at Berlin, when the International Organisation Committee meets. The discussions will commence on the Tuesday, and will continue until the following Thursday. Full information may be had from the honorary secretary to the Congress, Dr. E. Martin, Berlin, N., 24, Artillerierstrasse 18.

July 29th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Campaign of the Red Cross Society against Malaria in the Pontine Marshes.

SINCE 1900 the Croce Rossa has undertaken the struggle against malaria in the Pontine Marshes, where at that time 70 per cent. of the population were infected. They have already succeeded in diminishing this percentage by nine-tenths. Every year, at the beginning of the summer, the society sends its doctors and orderlies to this infected region, and during the winter supplements the work by the provision of good food and tonic medicines to fortify the sickly against the risks of the coming season. The whole region is divided into 13 districts, with an ambulance station in each. A doctor, a lieutenant or sub-lieutenant of the Croce Rossa, is in charge of each station, with hospital orderlies and drivers or porters. Each ambulance has a wagon or a hand-litter according to the size of the district and the nature of the roads. The doctors and attendants are supplied with horses. The regulation equipment of the ambulance consists of three cases: in one are contained "medical comforts," preserved meat, tablets of meat essence, and stimulants; in the second are surgical instruments and dressings; and in the third an assortment of drugs. The ambulance has to be provided for any emergency, as the doctor of the station may find himself called upon to cope with the various accidents, medical or surgical, which may arise in his district. These districts vary a good deal in size; that in which is situated the Cistercian monastery, where St. Thomas d'Aquinas died, is so large that it takes the medical officer four days travelling on horseback to make its tour. The inhabitants of these malarious regions are largely nomadic, poor, and ignorant, and give little assistance to the work done on their behalf; for example, the huts provided with wire-gauze netting are often rendered useless by the destruction of the netting. A better day, however, seems likely to dawn again upon this neglected country. The Minister of Public Works has approved the schemes drawn up by the Department of Civil Engineering for the drainage and improvement of the Pontine Marshes. The works are to be carried out by the State or by private bodies, where such make application to do the work for themselves; in these cases the contribution of the Government will be a fixed annual payment. In old times this country was called "the granary of Rome." With proper drainage and irrigation there is no doubt of its future prosperity, and a witness to the truth of this belief is borne by the number of applications received and good offers made for land in this region.

Antityphoid Inoculation.

Professor Castellani, director of the Institute of Tropical Medicine at Colombo, writes to the *Policlinico*[1] to call the attention of the medical profession in Italy to the desirability of antityphoid inoculation in the Italian army. Professor Castellani speaks from large personal experience, and states that the incidence of typhoid fever among the vaccinated troops in India and Ceylon falls to less than half, and the mortality to less than a quarter, of that obtaining among the unvaccinated soldiers living under the same conditions. He describes Wright's vaccine and his own living vaccine, and advises that for the present, and upon the large scale necessary for the protection of the Italian army, it would be better to make use of Wright's vaccine, the effects of which have been thoroughly studied, which is simpler to prepare, is of very small cost, is very easy to use, and has been proved harmless.

The Paternò Trial.

The trial of Lieutenant Paternò for the murder of the Countess Giulia Tregona in a fifth-rate hotel in Rome, in March, 1911, has recently been concluded. The case gained public notoriety from the fact that the man was a cavalry officer and a baron, and the lady a lady-in-waiting to the Queen of Italy, but it was in reality nothing but a sordid drama of selfish passion. It merits a note, however, on account of the prominence given to the psychological experts and the use made of the medical evidence. Professor Maiano, the psychologist called for the defence, occupied the time of the court for nearly three days in an exhaustive analysis of the whole life of the accused. Both he and the counsel for the defence attached great importance to the previous history of syphilis and the probability of a present tuberculous infection in the accused as disposing to a state of mind in which the ordinary social laws cease to be operative. When the medical expert who made the necropsy was called, the defence objected to his giving an opinion on any point not absolutely related to the findings of the post-mortem examination, the counsel for the accused declaring that the opinion of the witness could be of value only in the matter of the post-mortem, and that on psychological questions he was not entitled to speak. The judge upheld this contention. Notwithstanding all the efforts made on his behalf the accused was found guilty of murder without any extenuating circumstances, and was sentenced to the maximum penalty.

Seaside Homes and "Alpine Colonies."

In the matter of seaside homes for weakly children the province of Lucca led the way. The first seaside home was opened at Viareggio in 1842 and has continued to exist ever since. Every summer it receives some 600 children. For the last ten years Lucca has also maintained homes in the hills for delicate children during the summer and a seaside home during the winter months at Viareggio.

July 27th.

[1] See Prat. Anno xix., Fasc. 27.

THE NATIONAL INSURANCE ACT.

THE ADMINISTRATION OF SANATORIUM BENEFIT.

THE National Health Insurance Commission (England) have issued a circular for the guidance of Insurance Committees with regard to the administration of sanatorium benefit. They point out the advisability of each committee appointing at once a sub-committee to deal with the matter and of making the tuberculosis officer, where one has been appointed, the medical officer to the committee. Where no such officer has been appointed a certificate from a medical practitioner that the insured person is suffering from tuberculosis must be supplied to the clerk to the committee. The Insurance Committees are warned that all institutions must be approved by the Local Government Board before patients may be sent to them.

THE COUNTY MEDICAL OFFICER FOR LONDON AND THE INSURANCE COMMITTEE FOR THE COUNTY.

The General Purposes Committee reported to the London County Council on July 30th that it had received a request from the Insurance Committee for the County of London that the Council would consent to the medical officer of health of the county attending meetings of the committee and giving advice and assistance. The committee stated that while desirous of giving every facility to the Insurance Committee it was difficult to accede to the request, inasmuch as all the time and energies of the medical officer were necessarily devoted to the work of his office, and especially, at the present time, in connexion with the work of medical inspection of children in public elementary schools. The Council had already appointed as a member of the Insurance Committee Sir Shirley Murphy, the late county medical officer, whose services had been retained by the Council in a consultative capacity until Dec. 31st, 1914, and the committee felt confident that the great knowledge and experience of public health administration which Sir Shirley Murphy, by his service on the committee, was placing at its disposal would supply all that the committee required. Further, the Public Health Committee was furnishing the Insurance Committee with all the information at its disposal.

After some debate, in which the chairman of the committee repudiated any suggestion of political animus, the Council decided, on the recommendation of the General Purposes Committee, not to accede to the request.

A PUBLIC MEDICAL SERVICE FOR THE WANDSWORTH AREA.

A scheme has been submitted by a Provisional Medical Committee for the consideration of the whole of the medical profession in the neighbourhood included in the Wandsworth

Division of the British Medical Association, and all the practitioners concerned are asked to make themselves thoroughly conversant with its details before a meeting of the local profession which will take place as early in September as possible. The object of the scheme is to organise the provision of medical attendance and medicine for persons unable to pay ordinary charges. Any registered practitioner in the area may become an officer of the service; criticisms have been invited, and any resolution or amendment, with number of clause and paragraph in the scheme to which they relate, and with the signatures of proposer and seconder, are to be sent not later than Sept. 1st to Mr. J. Kennish, honorary secretary to the Provisional Medical Committee, at 73, Clapham Park-road, London, S.W.

The scheme is a simple and thorough one, and localities in doubt how to proceed might well ask to be supplied with copies of its details. It takes into consideration both persons who are and who are not insured under the Act, the uninsured persons submitting to the regulations and paying 2*d.* per week above 16 years of age. A composition fee may be accepted for children.

The medical staff may be either: (1) capitation and tariff fee members; (2) capitation members only; (3) tariff fee members only; or (4) honorary members.

Capitation and tariff fee members accept payment either by capitation subscription or by tariff fee per attendance. *Capitation members* accept capitation subscriptions only. *Tariff fee members* accept payment per attendance only. *Honorary members* agree to abide by the rules of the service, but do not undertake ordinary medical attendance in connexion with the service.

The usual rules provide for officers, general and special meetings, and powers of the committee, the important regulations under the head of "Government" being the following:—

Members not to accept lower rates.—No member shall take, or continue to treat, any contributory contract patient at a lower rate than the subscriptions prescribed in these rules.

Canvassing and advertising.—No canvassing or advertising shall be permitted by, or on behalf of, any member of the service. No member shall himself receive, or employ a collector to collect, subscriptions from contributory contract patients.

Members not to hold club appointments.—No member shall hold any appointment as medical officer to a club or conduct any club of his own composed of assured persons.

For any wilful breach of the rules of the service (after attention has been called to such breach by the committee) a member may be expelled from membership by the vote of three-fourths of the members present and voting at a general meeting, providing that 20 per cent. of the members of the staff are present.

The rules of the service cannot be altered except with the consent of two-thirds of the members present and voting at a general meeting, after 14 days' notice of the terms of any proposed alteration.

The following are the main conditions under which subscribers can receive the benefits of the service:—

Classification and admission of subscribers.—Subscribers, when applying for admission, may elect to join the service either as—(1) "Capitation subscribers" or as (2) "Tariff fee subscribers." Subscribers shall be admitted to his list by any acting member after medical examination. The committee shall determine the income limit for admission as a subscriber to the service, but in no case shall the income exceed £2 per week. Should cases arise in which there may be doubt as to the eligibility of the applicants, they shall be referred to the committee for its consideration, and the decision of the committee on the question of eligibility shall be final. If any subscriber shall, in the opinion of the committee, cease to be eligible, his name shall be removed from the list of subscribers.

Subscriptions.—(*a*) For capitation subscribers the subscription to the service for a person insured under the National (Health) Insurance Act, 1911, shall not be less than 3*d.* per week, inclusive of drugs and cost of administration, provided that in the case of persons who may appear on the medical examination to be below the ordinary standard of health of subscribers, the committee may prescribe special rates of subscription, and that the subscription be paid weekly, quarterly, or half-yearly in advance.

(*b*) A tariff fee subscriber, whether insured under the National (Health) Insurance Act, 1911, or not, shall on admission, and annually thereafter so long as he remains in the service, subscribe the sum of 1*s.*, and shall, in addition, agree to pay his medical attendant for ordinary medical attendance and medicines at the following rates:—

	s.	*d.*
Visit	2	0
Visit and medicine	2	6
Consultation at surgery	1	6
Consultation with medicine	2	0

and that insurance for these fees, in some company to be approved hereafter by the Public Medical Service Committee, be compulsory as a condition of membership of the service.

Accounts and arrears.—(*a*) A capitation subscriber whose subscriptions are three weeks or more in arrear, at least one week's notice in writing having been given him, shall be struck off the list of subscribers, and shall not be readmitted except on payment of all arrears or such part thereof and such fine as may be approved by the committee.

(*b*) Accounts of tariff fee subscribers shall be rendered in duplicate, monthly, to the patient and the Public Medical Service. Contract fee subscribers must, on entrance, authorise the insurance company to pay these accounts to the Public Medical Service.

(*c*) All fees for professional services to tariff fee subscribers should be paid by insurance companies through the Public Medical Service.

Choice of medical attendant.—(*a*) A subscriber shall, on admission, and at such other times as are provided by these rules, choose his medical attendant from the members of the service who are willing to attend him, and shall for the time being be entitled to the services of such member only.

(*b*) The contract of the subscriber shall be with his medical attendant only, and not with the service or the other members of the service.

(*c*) Except by the consent of both members concerned, the subscriber shall not change his medical attendant more than once in six calendar months, giving at least a month's notice, terminating on the 30th June or the 31st December.

(*d*) The member in charge of a case may, on the ground of wilful disobedience or misconduct on the part of the subscriber, forthwith report to the committee.

Subscribers' cards.—Every subscriber shall, on admission, be supplied with a card, which shall refer to these rules, and on which shall be printed such of these rules as the committee may think necessary, and on which also shall be set forth such information, including the name and hours of the subscriber's medical attendant, as may be approved by the committee. Failing production of the card attendance may be refused.

Privileges of subscribers.—A "Capitation" or "Tariff Fee Subscriber," in accordance with these rules, shall be entitled to receive, so long as his subscriptions are not in arrear:—

(i.) Ordinary medical and surgical treatment at the (surgery of his medical attendant) or (dispensary of the service) within the hours mentioned on his card.

(ii.) When his condition requires it, ordinary medical and surgical treatment at his place of dwelling, other than night calls and special visits as hereinafter defined.

(iii.) All needful medicines and first dressings for wounds and other injuries.*

(iv.) In case of removal, the subscriber shall give immediate notice to his medical attendant, who shall have the right to discontinue attendance.

Limitation of benefits.—Subscribers shall not be entitled, in consideration of their ordinary subscription—

(i.) To medical service in respect of any of the following matters, except upon payment of the fees specified in the following table, and payment at the time:—

	£	*s.*	*d.*
(*a*) Confinements	1	1	0
(*b*) Miscarriages	1	1	0
(*c*) Vaccinations (at surgery or patient's house)	0	4	0
(*d*) Fractures.			
(*e*) Dislocations.			
A minimum attendance fee of 1*s.* 6*d.* per visit or consultation. (Refers only to capitation subscribers.)			
(*f*) Consultations: ordinary attendant	0	5	0
Consultant			
(*g*) Administration of a general anæsthetic 10*s.* 6*d.* to	1	1	0
(*h*) Night visits, i.e., visits made between 8 P.M. and 8 A.M., in response to calls received between those hours	0	5	0
(*i*) Special visits, i.e., visits made in response to, and on the same day as, calls received after 11 A.M., or made on Sundays, at the desire of the subscriber	0	1	6
(*j*) Certificates and reports. (Certificates, 1*s.*; reports from 10*s.* 6*d.* upwards.)			

(ii.) To medical service in respect of illness the consequence of personal misconduct. There shall be no obligation on the part of the medical officer to provide medical service in respect of illness the consequence of personal misconduct, except by arrangement.

(iii.) To medical attendance in respect of—

(*a*) Illness arising from confinement or miscarriage within one month, where not attended by a member of the staff.

	s.	*d.*
For the first visit	10	6
For subsequent visits	2	6

(*b*) Operations requiring local or general anæsthetics.

(*c*) Operative dentistry, the fees for which shall be specially arranged.

(iv.)* To cod-liver oil, linseed meal, leeches, serum, oxygen.

(v.) To bottles,* jars,* dressings or bandages (except for first dressings).

(vi.) To special examinations—e.g., X ray, bacteriological, &c.

(vii.) To examinations, court attendances, &c., under Common Law and Workmen's Compensation, Employers' Liability, and other statutes.

(viii.) To medical attendance in respect of tubercular disease, when actually in receipt of sanatorium benefit under the National Insurance Act.

Under miscellaneous arrangements in connexion with finance it is provided that all payments made by a subscriber shall be the exclusive property of the member who is his medical attendant at the time when such payment becomes due, subject only to a rateable deduction for the expenses of collection and the general expenses of the service. All moneys collected are to be paid into a bank, to the credit of the Public Medical Service, and the balance is to be distributed after payment of expenses to each member in accordance with his earnings. A member may sell to any person

* In any service not providing medicines this provision will, of course, be deleted.

* In services not providing medicines these items would be deleted.

qualified for membership his interest in the service, and the purchaser will become entitled thereto upon becoming a member of the service. Although the masculine gender is used throughout, the coöperation of female members is expected.

A NOTE ON SIR WILLIAM PLENDER'S REPORT.

Dr. H. F. Oldham, of Morecambe, has drawn up the following comparison of general practice before the National Insurance Act and after, based on the report of Sir William Plender and Mr. J. F. Sowerby. Dr. Oldham writes:—

In the following comparison the population in the towns examined by Sir W. Plender is taken in round numbers at 400,000 and similarly the contract patients in round numbers at 40,000, the actual figures on the aggregate of the two years being respectively 406,832 and 42,669. The average attendances on the uninsured population (538,400 attendances on 363,713 persons) is taken at 1·5 per head, and the average attendance on contract patients is taken at 5·5 per head.

	Before the Act.	*The Act in force.* Insured persons at 8/6 per head. B.M.A.	Insured persons at 4/6 per head. Mr. Lloyd George
Population—			
Uninsured persons	360,000	280,000	280,000
nsured persons	40,000	120,000	120,000
Total	400,000		
Attendances or visits on—			
Uninsured	540,000	420,000	420,000
Insured	220,000	660,000	660,000
Total	760,000	1,080,000	1,080,000
Amount received on account of—			
	@ 4/2	@ 4/2	@ 4/2
Uninsured	£74,988	£58,324	£58,324
	@ 3/11	@ 8/6	@ 4/6
Insured	£7,832	£52,000	£27,000
Total	£82,820	£110,324	£85,324
Average fee per attendance	2/2	2/1	1/6
Attendances and visits in-			
creased under the Act		320,000	320,000
Additional cost		£27,504	£2,504
Provides for each added attendance		1/7	1d.
The number of practitioners being 170—			
Gross income of each for work inside the towns	£860	£820	£675
Deduct 5/12ths of gross for expenses	£385	£480	£395

Here is a plain business proposition. If the 170 practitioners can make the necessary 320,000 additional attendances they would each under the B.M.A. plan add £100 per annum to their incomes. Under Mr. Lloyd George's plan the extra work would be practically gratuitous.

If the 170 practitioners could not make these additional attendances, and most general practitioners are already working full time, the number of practitioners would be increased and the individual incomes proportionately decreased. That is even at 8*s.* 6*d.* per insured person the Act means increased work or reduced incomes.

It is perhaps worth noticing that the population dealt with (400,000) is approximately 1 per cent. of the total population involved. The above figures, therefore, multiplied by 100 will give those for Great Britain.

The above comparison has already appeared in the daily papers, but may be published here with advantage as one more proof that Sir William Plender's report did not prove what the opponents to medical views have alleged—things which it is quite clear that the authors of the report never claimed for their work. The report was, from its limitations, bound to do little to clear the situation, and the question why no southern town was included in the places investigated, which has been addressed to us by a correspondent, we cannot answer.

THE STATE MEDICAL SERVICE ASSOCIATION.

The preliminary suggestions for the formation of the State Medical Service Association were made public in Liverpool last week at the meeting of the British Medical Association. These provide for the formation of a society on the usual lines with local branches in every district, a minimum subscription of 5*s.* per annum, a president, vice-presidents, a committee of 12, with power to add to the number, an honorary treasurer, and an honorary secretary. Mr. Charles A. Parker (24, Upper Wimpole-street, London, W.) is acting for the present as secretary to the movement. The main object of the association, which in its present state is designed to be educative, is to promulgate the advisability of a State service amongst the medical profession, to make clear its advantages to the public, and to promote its adoption by Parliament, to carry out which programme the association will hold meetings, publish and circulate literature, and otherwise propagate its cause, which is defined under the following headings:—(*a*) That the whole profession shall be organised on the lines of other State services now in existence. (*b*) That entry to the profession shall be by one State examination only. (*c*) That each member of the service shall be paid an adequate salary, increasing gradually according to length of service and position, and shall be entitled to a pension after a specified number of years' work or in the case of permanent disablement. (*d*) That whilst members of the public shall have free choice of doctors, no doctor shall be called upon to have charge of more than a specified number of patients. (*e*) That one of the primary objects of the State service shall be to unite preventive and curative medicine. (*f*) That all hospitals shall be nationalised and used for the purpose of consultative, operative, and therapeutic work, at the request of, and in conjunction with, the patient's own doctor. (*g*) That the services of the State doctors shall be open to every man, woman, and child—rich or poor. (*h*) That the State Medical Service shall be administered by a Board of Health under a Minister of Public Health with Cabinet rank.

NEWBURY AND DISTRICT MEDICAL SOCIETY.

We have received the following letter from Mr. Arthur Thompson, Hon. Sec., Newbury and District Medical Society:—

SIR,—At a meeting of the Newbury and District Medical Society, held on Friday afternoon, July 26th, the enclosed three resolutions were proposed, seconded, and unanimously adopted, and it was also decided to send them up to your journal with the request that they should be published in your next issue. Yours faithfully,

Highlands, Newbury, July 27th, 1912. ARTHUR THOMPSON.

1. That having considered schemes A and B of the British Medical Association for the administration of medical benefits under the Insurance Act, we consider them unsuited to the Newbury and District portion of this Division.

2. That this society protests against the Association permitting any medical practitioners to accept any office under the Insurance Act, whether sanatorium office or otherwise, until the seven cardinal points are granted to the profession

3. That in the opinion of this meeting the time is now ripe for the British Medical Association to call upon all Poor-law medical officers for their resignations, to be used in the event of the Commissioners, through boards of guardians or otherwise, endeavouring to work the Insurance Act in any way by their services.

Medical News.

OXFORD UNIVERSITY.—The undermentioned candidates have been approved in the following examinations:—

Diploma in Ophthalmology.—B. G. S. Acharya, J. McC. Browne, A. B. Cluckie, J. N. Daggan, D. V. Giri, W. L. Simpson, and A. E. Verney.

Master of Surgery.—H. S. Souttar.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—At a meeting of Comitia of the Royal College of Physicians of London held on July 25th, and of the Council of the Royal College of Surgeons of England held on the same date, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following 104 candidates who have passed the requisite examinations and have complied with the by-laws:—

*Bindignavale Gamdachanja Srinivas Acharya, M.B., C.M. Madras, Madras University; Herbert Clifton Attwood, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Robert Eric Barnsley, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Henry Washington Batchelor, London Hospital; Basil Fraser Beatson, St. Mary's Hospital; William Somerset Birch, King's College Hospital; *Edward Wrigley Braithwaite, L.M.S.S.A. Lond., Leeds University; Roger Orme Bridgman, St. Bartholomew's Hospital; George Bent Buckley, Manchester University; Edward Calvert, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Geoffrey Williams Carte, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; George Martin Chapman, B.A. Cantab., Otago and Cambridge Universities and London Hospital; Noel Godfrey Chavasse, M.A. Oxon., Oxford and Liverpool Universities; Joseph Douglas Clarke, B.A. Cantab., Cambridge and Birmingham Universities; Kenneth Bleckly Clarke, Guy's Hospital; Richard Challoner Cobbe Clay, King's College and Westminster Hospitals; Claude Gray Colyer, L.D.S. Eng., University College Hospital; Harold Fitzwilliam Comyn, B.A. Cantab., Cambridge University and St.

George's Hospital; William Albert Cooke, M.A. Oxon., Oxford University and St. Bartholomew's Hospital; Denis Clarence Cooray, L.M. & S. Ceylon, Ceylon Medical College and London Hospital; Frank Cuninghame Cowtan, St. Thomas's Hospital; Spencer Stawell Crosse, B.A. Cantab., Cambridge University and Guy's Hospital; William Edmund Crowther, B.Sc. Leeds, Leeds University; Arthur Aird Mercer Davies, Oxford University and Westminster Hospital; *David Arwyn Davies, Guy's Hospital; David Henry Davies, University College, Cardiff, and Middlesex Hospital; John Wescott Dew, B.A. Cantab., Cambridge University and London Hospital; Ivan Wanless Dickson, M.B. Toronto, Toronto University and London Hospital; Lionel Alfred Dingley, University College Hospital; William Townsend Dobson, University College, Cardiff, and St. Bartholomew's Hospital; William Agar Scholefield Duck, Middlesex Hospital; *Wladimir Gerhard Engels, M.D. Heidelberg, Heidelberg University; George Frederick Fawn, L.D.S. Eng., B.D.S. Bristol, Bristol University; Gertrude May Flumerfelt, Royal Free Hospital and Manchester University; Henry Wyndham Goodden, Bristol, Vienna and Paris Universities; Frank Arthur Grange, London Hospital; David Henry Griffiths, University College, Cardiff, and St. Mary's Hospital; Percy Douglas Hamilton, Charing Cross Hospital; Thomas Edwin Hammond, St. Bartholomew's Hospital; Thomas Lionel Hardy, B.A. Cantab., Middlesex Hospital; Francis Frederick Trevor Hare, M.B., B.S. Durham, Durham University; Howard Davidson Harrison, M.B. Toronto, Toronto University and London Hospital; George Murray Heiron, London Hospital; William George Helsby, Glasgow University and Charing Cross Hospital; *Harold William Hills, University College Hospital; Thomas Herbert Holroyd, Birmingham University; Frank Mainwaring Hughes, London Hospital; William Philip Johnston, M.B., Ch.B. New Zealand, New Zealand University and Middlesex Hospital; James Moncrieff Joly, Guy's Hospital; Cecil Meredyth Jones, Westminster Hospital; Clement Carlyon Kerby, B.A. Cantab., Cambridge University and St. George's Hospital; Gordon Burnham King, University College Hospital; Edmund Thomas Howard Lea, King's College and Westminster Hospital; Frederick Martin Lipscomb, King's College Hospital; Farquhar McGillivray Loughnane, St. Thomas's Hospital; Victor Alfred Luna, Guy's Hospital; *Frederick Champ McCombie, King's College Hospital; Bryen McDermott, Guy's Hospital; Henry Sinclair Mason, St. Mary's and Middlesex Hospitals; William Matthews and George Sefton Miller, Guy's Hospital; Josef Mitterstiller Innsbruck University and Middlesex Hospital; Wilfrid George Orchard, St. Bartholomew's Hospital; Richard Francis O'Sullivan, M.B., B.S. Melbourne, Melbourne University and Middlesex Hospital; *Purushottam Tulsidas Patel, Bombay University and London Hospital; Dyfrig Huws Pennant, University College, Cardiff, and London Hospital; Michael Joseph Petty, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Allan Pimm, University College Hospital; Thomas William Watkin Powell, St. Mary's Hospital; Percival Thomas Priestley, Birmingham University; Edwin Cromwell Rayner, B.A. Cantab., Cambridge University and Middlesex Hospital; John Magnus Redding, Charing Cross Hospital; Walter Alexander Reynolds, St. Mary's Hospital; Ffrangcon Roberts, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Theodore Essex Roberts, Guy's Hospital; *Walter Rowland Southall Roberts, Birmingham University; Alexander Rocke Robertson, M.D., C.M. McGill, McGill University and London Hospital; Robert Bradley Roe, St. George's Hospital; Douglas Ross, London Hospital; Archibald Cathcart Roxburgh, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Leonard Trevelyan Rutherford, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Samuel Samuel, Leeds University; William Barwise Sanders, University College Hospital; Eric Graham Saunders, St. Thomas's Hospital; David Scott, London Hospital; Maitland Scott, Guy's Hospital; Charles Sheard, M.B. Toronto, Toronto University and London Hospital; Hugh John Sladen Shields, Cambridge University and Middlesex Hospital; Sidney Smith, King's College Hospital; Gerald Arthur Smythe, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Wilfrid Archer Sneath, M.B., Ch.B. Victoria, Manchester University; Victor Farrar Soothill, B.A. Cantab., Cambridge University and Guy's Hospital; Gordon Winstanley Spencer, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Arnold Rothwell Taylor, Manchester University; William Rees Thomas, M.D., M.B., B.S. Lond., University College, Cardiff, and Charing Cross Hospital; James Montague Wallace, M.A. Cantab., Cambridge University and University College Hospital; Llewellyn Rhys Warburton, St. Thomas's Hospital; Cuthbert Warner, B.A. Cantab., Cambridge University and Guy's Hospital; *Harold Webb, Guy's Hospital; Clement Arthur Webster, Manchester University; Hamlet Mark Whelan, University College, Cardiff, and London Hospital; Noel Tancred Whitehead, St. Thomas's Hospital; Oscar Reginald Lewis Wilson, Guy's Hospital; and John Alfred Wood, M.A., M.B. Oxon., Oxford University and St. Thomas's Hospital.

* M.R.C.S. Diploma granted previously.

Diplomas in Public Health were conferred, conjointly by the two Colleges, upon the following 21 candidates, viz. :—

Ram Swarup Agrawal, L.R.C.P. & S. Edin., L.F.P. & S. Glasg., Surgeon's Hall, Edinburgh, and Cambridge University; Thomas Barbour, M.B., Ch.B. Glasg., Glasgow University and Guy's Hospital; William Ashley Beet, L.R.C.P., M.R.C.S., London Hospital; Percy Stanley Blaker, L.R.C.P., M.R.C.S., L.S.A. Lond., University College; Herbert Charles Horace Bracey, M.B., Ch.B. Birm., Birmingham University; James Carrick, M.B., Ch.B. Glasg., Glasgow University and University College; Francis Garland Collins, L.R.C.P., M.R.C.S., University College; Sidney Herbert Dankes, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; William Gillitt, Capt. I.M.S., M.B. Lond., L.R.C.P., M.R.C.S., Middlesex Hospital and Royal Army Medical College; Ernest Whitmore Newton Guinness, L.R.C.P. & S.I., Dublin and Liverpool Universities; Charles Tilson Hudson, Lieut.-Col. I.M.S., L.R.C.P., M.R.C.S., Bristol University; Charles William McLeay, M.D., Western University, Canada, L.R.C.P., M.R.C.S., Western University and University College; Joseph Victor Mascarenhas, M.B., C.M. Madras, Madras University and University College; Kalka Prasad Mathur, L.R.C.P., M.R.C.S. Punjab University and London Hospital; Thomas Massey Pearce, M.D. Lond., L.R.C.P., M.R.C.S., University College; John McFarlane William Pollard, M.D., B.S. Lond., L.R.C.P., M.R.C.S., Guy's Hospital and University College; Ernest Littleton Sandiland, M.B., B.S. Lond., L.R.C.P., M.R.C.S., London Hospital; Dorothea Lenore Schwabe, L.R.C.P. & S. Edin., L.F.P. & S. Glasg., London School of Medicine for Women and University College; Herbert Chavasse Squires, M.B., B.Ch. Oxon., M.R.C.P., M.R.C.S., Oxford University and St. Thomas's Hospital; Gustav Weber Thompson, M.B., Ch.B., B.A.O., R.U.I., Dublin University and University College; and John Thompson, M.B., B.S. Lond., M.B., Ch.B. Vict. Manchester University.

LONDON SCHOOL OF TROPICAL MEDICINE.—At the examination at the end of the thirty-ninth session (May to July, 1912) the following students were successful :—

*W. Allen (Colonial Service), A. B. Arora, H. B. Blaker (Indian Government), *S. L. Brohier (Colonial Service), *Major W. P. Chamberlain, U.S. Army, J. F. Corson (Colonial Service), H. Fleming (Colonial Service), *W. J. Geale, J. L. Gilks (Colonial Service), J. C. C. Hogan (Colonial Service), *J. E. L. Johnston (Colonial Service), *Captain W. Lapsley, I.M.S., Captain W. F. M. Loughnan, R.A.M.C., *F. C. McCombie, A. C. N. McHattie (Colonial Service), R. S. Marshall, A. R. Neligan (Foreign Office), *A. H. Owen (Colonial Service), *Major H. R. Price, I.M.S., H. B. Rosair, N. A. Dyce Sharp (Colonial Service), A. Lionel Smith, *Captain H. Emslie Smith, I.M.S., *B. Spearman (Colonial Service), W. Telfer (Colonial Service), A. D. J. B. Williams (Colonial Service).

* With distinction.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful :—

M.D.—Ambrose Spong.
Ch.M.—E. E. Hughes.

FINAL M.B. AND CH.B.

Walter Barnes, R. B. Berry, C. T. G. Bird, A. G. Bryce, C. L. Graham, Harold Harrison, T. P. Kilner, J. A. Lees, A. H. Macklin, P. H. Midgley, T. H. Oliver, Frank Oppenheimer, R. P. Stewart, C. F. White, and A. G. Wilkinson.

Forensic Medicine and Toxicology.—Allan Barrett, F. A. Bearn, J. G. Bennett, F. C. Bentz, E. S. Brentnall, C. H. Crawshaw, G. C. Dixon, H. C. Duffy, C. W. Fort, H. S. Gerrard, R. B. Gorst, H. F. Hutchinson, T. P. Kilner, Eugene Leahy, C. G. Lees, A. H. Macklin, P. L. Newton, T. P. Robertson, H. A. Sandiford, A. V. Stocks, Ernest Talbot, Cornelius Thompson, F. K. Tomlinson, C. H. Whittall, H. W. F. Williams, S. A. Winstanley, and G. W. Wood.

FIRST M.B. AND CH.B.

Part III. (Organic Chemistry and Bio-Chemistry).—J. H. Albinson, Kathleen L. Cass, Richard Colley, E. R. Gilmore, Eva L. Glasier, Jacob Holker, B. L. Lloyd, R. L. Newell, F. C. Ormrod, J. A. Panton, Nesta H. Perry, Dorothy Potts, C. R. Sandiford, Norah H. Schuster, Walter Stansfield, D. M. Sutherland, Louis Walton, G. B. Wild, and J. C. Williams.

THIRD M.B. AND CH.B.

Pharmacology and Therapeutics and Hygiene.—Lily Allan, Ada L. Bentz, W. S. Booth, Basil Browning, Frank Chadwick, Joseph Fielding, D. T. Harris, J. R. Jagger, O. M. de Jong, E. A. Linell, Clara A. Lomas, Kamel Maximus, Kate K. May, John Rothwell, J. R. B. Russell, J. R. Slack, Percy Stocks, and E. H. Walker.

B.D.S. (Final Examination).—C. F. Scott.

Diploma in Dentistry (Final Examination).—H. V. Brown, T. C. Cregan, H. D. Firth, J. E. Gilbert, H. O. Hatton, E. R. Lamb, Kate Latarche, D. J. O'Brien, and E. B. Ryley.

Diploma in Public Health.—Rupert Briercliffe, W. A. Bullough, J. P. Elias, Helen Forbes, Gertrude H. Hickling, R. A. Jackson, N. T. K. Jordan, G. H. Leigh, Charles Mackey, E. H. Scholefield, J. McG. Williams, William Wright, and W. A. B. Young.

Diploma in Veterinary State Medicine.—H. E. Hornby.

UNIVERSITY OF BRISTOL.—The Council of the University has made the following appointments :—Demonstrator in pathology : J. Kay Monat, M.A. Oxon., M.B., Ch.B. Bristol. Assistant curators of the pathological museum : Hubert Chitty, M.B., M.S. Lond., F.R.C.S. Eng., and Leonard N. Morris, M.B., Ch.B. Bristol, M.R.C.S. Eng., L.R.C.P. Lond.——In recent examinations the following candidates have been successful :—

FIRST EXAMINATION FOR THE DEGREES OF M.B., CH.B.

Reginald Bertram Britton, John D'Arcy Champney, Arthur Denis Symons, and Ronald Henry Tasker.

FIRST EXAMINATION FOR THE DEGREE OF B.D.S.

Alfred Williams.

Chemistry (Completing Examination).—William Harold Greet and Robert Hugh Turner.

Zoology.—William John Langford.

UNIVERSITY OF SHEFFIELD.—The Council of the University at its last meeting made the following appointments :—Mr. Harold Leader, M.B., M.R.C.S., L.R.C.P., to the post of lecturer in diseases of children; Mr. H. Nield, M.B., Ch.B., to the post of demonstrator in anatomy; and Mr. E. F. Finch, M.D., F.R.C.S., and Mr. P. A. Reckless, F.R.C.S., to be honorary demonstrators in anatomy.

DONATIONS AND BEQUESTS.—The late Mr. John Hodding Davis has left by will £500 each to the Royal West of England Sanatorium, Weston-super-Mare, the Hambrook Cottage Hospital, and the Taunton and Somerset Hospital.

MEDICAL WOMEN AND THE WHITE SLAVE TRAFFIC.—The women doctors' memorial to Mr. Asquith in support of the Criminal Law Amendment Bill has now been signed by 120 of the best known medical women. Others who wish to add their signatures to this memorial are asked to communicate with the secretary of the "Pass the Bill Committee," Miss Howes, 19, Tothill-street, Westminster.

THE ROYAL FREE HOSPITAL.—At the quarterly meeting of the committee of management on July 25th, Lord Sandwich presiding, it was announced that land had been secured in the rear of the hospital for a new out-patient department, to include a complete obstetric department with residential quarters for those engaged in the work. Sketch plans have been prepared by the architect, Mr. H. V. Ashley. A large sum of money will be needed for the work.

A MOVEMENT in favour of establishing a university at Dresden, which has been much discussed, is not likely to come to anything at present as both the lawyers and the doctors seem to think that the legal and medical professions are too full already, and that a second first-class university in Saxony would tend to increase the overcrowding, besides costing a great deal of money, which, of course, would fall on the taxpayers. Leipsic is one of the best universities in the world and is quite sufficient for all Saxon needs.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The British Medical Association and the Insurance Commissioners.

THE official representations by the British Medical Association regarding the administration of medical benefit and the reply of the National Health Insurance Joint Committee thereto have been issued as a Parliamentary paper.

The Mental Deficiency Bill.

The Government has signified its intention of modifying very considerably the central administrative machinery proposed in the Mental Deficiency Bill. Mr. MCKENNA, the Home Secretary, explained on Monday, July 29th, those changes to the Standing Committee of the House of Commons to which the Bill has been referred. In moving an amendment to substitute a board of control as the central authority, he said that in the Bill as originally drafted there was to be a new body of Commissioners in addition to the Lunacy Commissioners to deal exclusively with the feeble-minded. It was now proposed by the Government to establish a single board of control. This board would consist of not more than 15 members, of whom 12 would be paid. Of the 12 paid members, four would be legal members and four would be medical members. The remaining four paid members would be the chairman and three other members, of whom one must be a woman. The existing paid Lunacy Commissioners, eight in number, were to be *ex-officio* members of the Board of Control. It was further proposed that the executive committee of the board should be constituted so as to consist of the chairman and not less than four paid members. All the administrative work would be executed by that committee. He hoped that some members of the Lunacy Commissioners might consent to become members of the executive committee. The existing work of the Lunacy Commissioners, who would become commissioners of the Board of Control, would continue on the same footing as at present, with the exception that these Commissioners would have other duties added under the Bill. The existing jurisdiction in lunacy of the Lord Chancellor and the masters in lunacy would remain unimpaired. After some discussion on the new proposals of the Government the committee, by 21 votes to 4, decided to insert in the Bill the Board of Control as the central authority. The committee adjourned.

HOUSE OF LORDS.

MONDAY, JULY 29TH.

The Indian Sanitary Service.

Viscount MIDLETON asked the Secretary of State for India whether he could make any statement as to the reform in the sanitary service of India which had recently been under consideration; what would be the position of the head of the sanitary service under the new conditions, and when he would be in a position to lay papers on the subject.

The Marquis of CREWE (who was indistinctly heard) said that he hoped very soon to be able to lay papers on this subject. He had addressed a despatch to the Government of India in which he stated that the precise relations of the Sanitary Commissioner to the Director-General of the Indian Medical Service would have to be a matter to which due consideration should be given. Their lordships might remember that one of the particular objections which had been taken to the system as it existed for the last five or six years was that it was found that there was more and more a divorce between the research side and the clinical side of the sanitary and medical service. Many of the younger medical officers who were employed for research purposes found that they were not in touch with important duties and had little or no opportunity of watching cases. The Government had now reached a conclusion which they hoped would be considered satisfactory. The Sanitary Commissioner would in future be relieved from a great body of work which had fallen upon him when he was the head of a separate department, and he would therefore have more time for inspection in different parts of the country. The research and bacteriological side, which was formerly under the Sanitary Commissioner, would now be placed under the direct authority of the medical director-general, but on all purely technical sanitary matters the Sanitary Commissioner would not be a subordinate but an independent officer. But on matters of administration and questions of appointments he would be in a position, as it were, of chief of staff to the director-general of the medical service. The India Office believed that this compromise between the abolition of the office of Sanitary Commissioner and its retention as a purely independent post would be the one best suited to Indian conditions. It was not possible to divorce the medical service from the sanitary service in India. The local governments must have a considerable degree of independence in sanitary matters, because they found practically all the money and because in India there was a far closer association existing between sanitation and politics than elsewhere. It would be possible by unwise insistence upon sanitary improvements to run counter to the deep-seated beliefs and prejudices of the population in many parts of India, and in such matters it might be presumed that the local governments were the best guides. The Sanitary Commissioner would not be an officer who gave orders in these cases so much as an inspecting, advising official, but his position would be of no little importance in India. On this subject he hoped that he would be able to submit papers before long, and also at the same time papers dealing with the question of the local sanitary services. In order to strengthen the local sanitary service it was proposed to add to the staff nine deputy commissioners of sanitation. For these posts Indians would be eligible as well as Europeans. It was also proposed to strengthen and enlarge the sanitary staffs of the big towns. It was hoped that in due course the more considerable towns in India would be provided with a health department, which would place them in regard to matters of sanitation on something the same level as the great communities in this country. The papers which he would lay would also touch on the malarial conference which had been held at Bombay for dealing with malaria in India. There were many facts which made the destruction of the malarial mosquito a greater difficulty in India than in other parts of the world. On the other hand, there had been notable successes, amongst other places in Bombay, and it might be trusted in time that steps would be taken all over India to diminish to a great extent this painful and disabling disease of malaria.

HOUSE OF COMMONS.

WEDNESDAY, JULY 24TH.

The Site of London University.

Mr. ROWLANDS asked the Prime Minister whether the proposal made to the Royal Commission on University Education in London by Sir Francis Trippel, and endorsed by them, to acquire a site on the Bedford estate for housing the University of London still had his approval, and whether, in the event of the Foundling Hospital site or the river site being selected for the University buildings, the moneys subscribed for the Bedford estate site would be available for either of the alternative sites.—Mr. ASQUITH replied: No proposals as to the acquirement of any site have been made to the Royal Commission or have been endorsed by them. I thought the Bedford site a good one when I was informed by Lord Haldane of the possibility of its acquisition, and I still think it a good one. The second part of the question refers to a matter as to which neither I nor the Government have any information.

Vaccination Exemptions in Scotland.

Mr. WILKIE asked the Secretary for Scotland to state the total number of declarations of conscientious objection to vaccination made in Scotland in the years 1907, 1908, 1909, 1910, and 1911, and also the percentages of these declarations to the births.—Mr. MCKINNON WOOD answered: The numbers and percentages are as follows:—

In respect of births registered in	Declarations.	Percentage of births.
1907	7,258	5·6
1908	15,846	12·1
1909	22,746	17·7
1910	26,954	21·7

The corresponding figures for 1911 are not yet available.

The Peamount Sanatorium.

Mr. ROBERT THOMPSON asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would state what local authority or association would be made legally liable for the maintenance of the Peamount sanatorium; and out of what fund would the cost of maintenance be defrayed.—Mr. BIRRELL wrote in reply: Peamount is held by trustees for the purposes of a sanatorium in connexion with the National Insurance Act, and the cost of its maintenance will be met by contributions of Insurance Committees who use it.

Belfast Sanatorium Grant.

Mr. ROBERT THOMPSON asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would state the amount which the city of Belfast was entitled to receive, on the basis of population, from the grant for the erection of sanatoria, &c., and to what extent that amount had been affected by the grant sanctioned for the sanatorium at Peamount, Dublin.—Mr. BIRRELL wrote in reply: If the whole of the Irish share of the grant were distributed between county areas in proportion to population the share of the city of Belfast would be £12,756, but the amounts immediately to be allocated to each county

will necessarily be affected not only by its interest (if any) in the expenditure incurred out of the grant to the Women's National Health Association of Ireland, but also by its interest in any part of the total grant which it may be decided to apply to other general national services. The question of the principles on which the grant is to be distributed is still under consideration with the Treasury, and I am not yet in a position to make a complete statement on the subject.

THURSDAY, JULY 25TH.

The Peamount Sanatorium.

Sir JOHN LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether before assenting to the grant to Lady Aberdeen for the purchase of the Peamount estate for the purpose of a sanatorium the Local Government Board satisfied themselves by expert investigation that the place was in every way suitable for the treatment of consumptives; whether he was aware that the residents in the neighbourhood of Lucan were strongly opposed to the placing of a sanatorium in their midst, and whether their objections were to be overridden; whether he had received a resolution of protest from the magistrates of the Celbridge petty sessions district, and what reply had been sent; and whether he would explain how it was that the joint board managing the Crooksling sanatorium, only a few miles distant from Peamount and occupying a much better site, were not invited by the Local Government Board to make provision for counties needing a sanatorium before a grant was made to a private association which was not under any legal liability to maintain sanatoria when erected.—Mr. BIRRELL replied: Peamount had been certified by several experts as entirely suitable for a sanatorium before any money was granted for its purchase. It stands in its own grounds of 120 acres and the nearest neighbours live from half to three-quarters of a mile away. These people have written to the newspapers repudiating the objections made by some of the residents in the district, who have expressed fears which are entirely at variance with the best medical opinion. The resolution of the Celbridge magistrates has been received by the Local Government Board, but no reply has yet been sent to it by the Board. The purchase of Peamount was sanctioned to meet conditions of great urgency, both the Treasury and the Insurance Commissioners being anxious that sanatorium accommodation should be available as soon as possible after the appointed day. This need could not have been met in time by opening negotiations with the managers of Crooksling Asylum nor was it the duty of the Local Government Board to do so. Peamount is held by trustees for the purposes of the Insurance Act, and the cost of its maintenance will be met by contributions from the Insurance Committees who use it.

Sir JOHN LONSDALE: Is it not a fact that this grant to Lady Aberdeen's association was made in opposition to expert official advice?

Mr. BIRRELL: No, sir, I am sure that it was not.

Sir JOHN LONSDALE: Will the right honourable gentleman say what priority of treatment was given to Lady Aberdeen's association, seeing that the principles on which the sanatorium grant is to be distributed have not even yet been decided?

Mr. BIRRELL: It was thought to be of the utmost importance as soon as the appointed day arrived that there should be provision at once available for persons suffering from tuberculosis. It was not a question of standing upon technicalities.

Sir JOHN LONSDALE: Why is it that the arrangement with the counties as to the provision of accommodation is different?

Mr. BIRRELL: The counties are in a different position. They have to see what accommodation will be required. We are all anxious that the counties should have every assistance in making their own provision as soon as possible. The great thing is that those counties which wish it may use the association's accommodation at once. Those counties which avail themselves of the benefit of it will have the amount charged against their share of the capital sum.

Sir JOHN LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would state the amount which the county of Armagh was entitled to receive on the basis of population from the grant for the erection of sanatoria, &c., and to what extent that amount had been affected by the grant sanctioned for the sanatorium at Peamount, Dublin.

Mr. BIRRELL replied: If the whole of the Irish share were distributed between county areas in proportion to population the share of the county of Armagh would be £3868. With regard to the remainder of the question I would refer the honourable Member to the reply given to the question on this subject yesterday asked by the honourable Member for North Belfast.

Sir JOHN LONSDALE: Is it not the case that the right honourable gentleman, having been induced to consent to a grant of £25,000 to the National Women's Health Association, meant that the share to every county in Ireland would be proportionately reduced?

Mr. BIRRELL: No, sir. The Health Association is simply acting as the agent of such counties as have asked for its services. There is no question of affecting the grant in any detrimental respect whatever.

Sir JOHN LONSDALE: Do I understand that each county in Ireland will have to take the initiative before any grant is made in connexion with sanatoria?

Mr. BIRRELL: I am happy to say that most of them are taking the initiative. All that has been done is to allot £25,000 to the National Women's Health Association—I do not know why the honourable gentleman should call it Lady Aberdeen's Association—in order to enable provision to be made at once for the work. Those counties which choose to avail themselves of the arrangement to send their patients to this association will be debited with the charge therefor.

Irish County Councils and Sanatorium Benefit.

Mr. LARDNER asked the Chief Secretary to the Lord Lieutenant of Ireland to state what arrangements or contracts have been entered into in Ireland by the several county councils for the provision of sanatorium benefit under the National Insurance Act; how many county councils proposed to provide sanatorium benefit under their own scheme; how many county councils had entered into, or propose to enter into, contracts with independent organisations for the provision of the benefit; would he state whether the Irish Local Government Board had had their arrangements or contracts under consideration; and, if so, what their decision had been in the various cases, and with what organisations contracts had been, or were proposed to be, entered into.—Mr. BIRRELL answered: Of the 39 county and county borough councils in Ireland, 16 so far are making their own arrangements for the treatment of tuberculosis. Three have handed over the administration of their share in the grant to voluntary associations, while six are keeping the arrangements in their own hands, but are contracting with voluntary associations. The remaining 14 councils have the subject still under consideration. The Local Government Board are in communication with the Treasury as to the principle which shall be adopted in regard to the allocation of the Irish share of the sanatorium grant, and until the amount available from this source for each county area can be definitely ascertained, the councils will not be in a position to consider the final features of these respective schemes.

Application forms for Sanatorium Benefit.

Mr. WORTHINGTON-EVANS asked the Secretary to the Treasury whether forms for use in connexion with applications for sanatorium benefit under the National Insurance Act were being withheld from the Worcester county council, or whether they had been sent since July 22nd; and whether similar delay had occurred in other cases.—Mr. MASTERMAN replied: The forms referred to have been drafted by the Insurance Commissioners in consultation with the Local Government Board, and are now being printed off. They will reach the Insurance Committees before the end of the week.

Sanatorium Accommodation in England.

Mr. ASTOR put a series of questions to the President of the Local Government Board in regard to sanatorium accommodation in England.—Mr. BURNS wrote in reply: So far as my information extends there are in England at the present time, excluding Poor-law institutions, eight sanatoriums or other institutions for the treatment of tuberculosis with 100 beds or more. Of these, two only have an extent of ground of half an acre or more per bed. Complete information as to the extent of ground attached to every existing sanatorium is not available, but there are at least eight in which the area of land is 50 acres or more, although the number of beds is at present less than 100. A new sub-department of the Local Government Board has been formed to deal with tuberculosis, and the medical staff has been enlarged by the appointment of an additional assistant medical officer and two additional inspectors. The staff is being utilised for the inspection of institutions and for other purposes in connexion with the treatment of tuberculosis, but I anticipate that further additions may be necessary in the near future. There are, according to my information, between 50 and 60 dispensaries in England for the treatment of tuberculosis, and I have no reason to doubt that all these institutions would be prepared to treat insured persons. The National Insurance Act provides that institutions for the treatment of such persons should be approved by the Board, and in their circular letters the Board have drawn attention to this requirement and have stated what information they should receive in connexion with applications for their approval. I have contemplated that any institution desiring approval would make application accordingly, and I have no doubt that as soon as any arrangements are proposed by the recently constituted Insurance Committees for the treatment of insured persons at dispensaries the authorities of the dispensaries will apply for the necessary approval. At present only two such applications have been received. In one case the dispensary has already been inspected, and I propose to approve of this institution provisionally for a period of six months. The other application was received yesterday, and I have arranged for the dispensary to be inspected to-morrow. I may say, however, that I have complete information as to many of the other dispensaries, and in such cases it will not be necessary to direct an inspection before giving approval for a limited period. It should be added that the medical officers of many of the existing dispensaries do not fulfil the conditions in respect of salary, &c., recommended for the chief tuberculosis officer in the interim report of the departmental committee. The Board have already approved for a period of six months of 11 sanatoriums and other residential institutions containing 420 beds, and have communicated with the authorities of 75 other institutions containing about 3500 beds, offering to approve of these institutions for a similar period. I cannot say how many beds in these institutions will be available for the reception of insured persons on August 1st. Seventy-one of the existing sanatoria in England have resident medical officers, but I cannot say in how many cases the medical officer devotes the whole of his time to the work of the sanatorium. In some cases the head of the sanatorium is also in private practice. In reply to the question as to the inspection of sanatoria, I may repeat what I have said in regard to dispensaries—viz., that I have complete information as to many of the existing sanatoria in England, and in such cases it will not be necessary to direct an inspection before giving approval for a limited period. I have already given the number of beds in the sanatoria and other residential institutions which have been approved. There are about 3000 beds in existing sanatoria for which a charge of 35s. per week or less is made, but I have no information as to the number of these beds which are available for insured persons. As the honourable Member is aware, I had proposed to issue a circular in January last urging councils of counties and county boroughs to organise schemes of treatment in dispensaries, sanatoria, and other institutions which should be available for the reception of insured persons recommended for sanatorium benefit by insurance committees. The issue of that circular was delayed in consequence of the appointment of the Departmental Committee. The Committee made their first report at the end of April last, and on May 14th the Local Government Board, after consultation with the Treasury and Insurance Commission, issued a circular letter to councils of counties and county boroughs commending the Committee's report to their serious consideration, and urging them to ascertain the needs of the areas under their jurisdiction and to formulate schemes. A large number of schemes have been prepared, and, subject to satisfactory financial arrangements being arrived at, they will be brought into operation without unnecessary delay. The moneys available for defraying the cost of treating insured persons are in the hands of insurance committees. These bodies have only recently been constituted, and I have suggested to local authorities that they should at once put themselves in communication with the insurance committees.

FRIDAY, JULY 26TH.

Medical Men and the Insurance Act.

Mr. CATHCART WASON asked the Secretary to the Treasury whether, in view of the hostility of medical practitioners to contract practice in connexion with the Insurance Act, further negotiations would be suspended on that point, and the amount available for medical relief paid over to the Insurance Committees and not, as had been suggested, to the individual person insured.—Mr. MASTERMAN said in reply: I do not think it desirable to make any statement on this subject at present.

MONDAY, JULY 29TH.

Accommodation for Tuberculous Patients.

Mr. ASTOR asked the President of the Local Government Board whether he would state how many small-pox, fever, and other hospitals had been inspected by the Local Government Board with a view to providing accommodation for insured persons suffering from tuberculosis and recommended for institutional treatment before July 15th, and how many had been inspected since then; and also whether he would state how many beds in small-pox, fever, and other hospitals had been approved by the Local Government Board as being suitable for insured persons suffering from tuberculosis and recommended for institutional treatment before July 15th, and how many had been approved since then; and if he would further state how many of these beds were empty and available for insured persons on July 15th, and how many were now empty and available.—Mr. BURNS replied: The Local Government Board in their circular letter of July 6th drew the attention of local authorities to the fact that their approval is required to any institution in which insured persons recommended for sanatorium benefit are treated, and stated what information they should receive in connexion with applications for their approval. On July 19th I furnished the Insurance Commission with a list of 45 isolation hospitals which contain at least 838 beds used for the treatment of tuberculosis, and which I am prepared to approve for a period of six months. I cannot say how many of these beds are at present available for the treatment of insured persons. Most of these hospitals have been provided by means of loans sanctioned by the Board, and, generally speaking, I have sufficient information in regard to isolation hospitals to render it unnecessary to direct further inspection before giving approval for a limited period. At present three hospitals containing 77 beds for the treatment of tuberculosis have been approved for a period of six months.

Insurance Committees and Hospitals.

Mr. LANE FOX asked the Secretary to the Treasury whether he was aware that the statement had been freely made that, under the National Insurance Act, health committees will be empowered to spend considerable sums on the building, equipment, and maintenance of hospitals, other than consumptive sanatoriums, and that it was therefore very uncertain what private or voluntary subscriptions would henceforth be required; whether he realised that this statement was having the effect of checking the flow of individual subscriptions to local hospitals; and would he make some counter-statement to prevent this result.—Mr. MASTERMAN answered: There is no provision in the National Insurance Act empowering Insurance Committees to spend money on the building or equipment of hospitals. Under Section 12 it is lawful for an Approved Society or Insurance Committee to grant such subscriptions or donations as it may think fit to hospitals, dispensaries, and other charitable institutions, and any sums so expended will be treated as expenditure on benefits. Approved Societies and Committees have also power under Section 12 in certain cases where insured persons are inmates of hospitals or similar institutions to pay sums payable on account of benefits in respect of such persons to the hospital or other institution concerned.

Medical Officers of Health and Sanatorium Benefits.

Mr. ASTOR asked the Secretary to the Treasury whether he would state how many local authorities had up to the present time consented to allow their medical officers of health to act temporarily as medical advisers to local insurance committees in regard to applications for sanatorium benefit.—Mr. MASTERMAN answered: The information in the hands of the Commissioners in regard to the matter referred to is not complete. The Commissioners, however, have been informed that the Insurance Committees have in most cases appointed subcommittees to deal with the administration of sanatorium benefit, and that these subcommittees are in communication with the county and county borough councils with regard to the arrangements, generally including arrangements for utilising the services of the medical officers of health. In about 30 cases there is definite information that the medical officer of health is already assisting the committee, and I have every reason to hope that the majority of local authorities will be willing to allow medical officers of health to act temporarily as advisers to the committees.

The Royal Commission on Vivisection.

Mr. ROWLANDS asked the Secretary of State for the Home Department whether, and, if so, when, he intended to act upon that portion of the unanimous report of the Royal Commission on Vivisection which recommended the appointment of additional inspectors under the Cruelty to Animals Act.—Mr. MCKENNA replied: The recommendations of the Commission are being considered as a whole. I hope to be able to deal with the matter before long.

TUESDAY, JULY 30TH.

Medical Men on Insurance Committees in Scotland.

Mr. F. WHYTE asked the Secretary to the Treasury to state what was the number of provisional Insurance Committees which were now fully constituted in Scotland, and the number of medical men who were now members of such committees.—Mr. MASTERMAN said in reply: The whole of the provisional Insurance Committees, 58 in number (31 county and 27 burgh), have been constituted by orders made by the Commissioners under Section 78 of the National Insurance Act. Eighteen doctors have accepted appointment on these committees.

The Capitation Fee under the Insurance Act.

Mr. GODFREY LOCKER-LAMPSON asked the Secretary to the Treasury whether the Government had taken into account the provision of a capitation fee for the medical profession in respect of all persons over 70 who had been insured, and all persons in receipt of disablement allowance who were no longer contributing, and those persons between 60 and 70 who had ceased to contribute, but were not yet 50 per cent. in arrear with their contributions; and whether the actuaries' estimates provided for 6s. a head for doctor and drug expenses in regard to all these cases.—Mr. MASTERMAN answered: The answer to all these questions is in the affirmative in respect of all persons entering into the National Health Insurance scheme at ages under 65.

Lunatics in England and Wales.

Mr. ARMITAGE asked the Secretary of State for the Home Department whether he would state the total number of lunatics in England and Wales, and the proportion they bore to the total population on Jan. 1st in each of the following years—1851, 1861, 1871, 1881, 1891, 1901, 1911, and 1912.—Mr. MCKENNA wrote in reply: The information is given in the following table:—

Table showing for England and Wales, the total number of Lunatics, Idiots, and Persons of Unsound Mind on Jan. 1st in each year, with their Ratio (per 10,000) to the Population.

Year.	Population (at the time of the Census).	Total number of lunatics, &c. (on Jan 1st).	Ratio (per 10,000) to population.
1851	17,927,609	16,456	9·18
1861	20,066,224	39,647	19·76
1871	22,712,266	56,755	24·99
1881	25,974,439	73,113	28·15
1891	29,002,525	86,796	29·92
1901	32,527,843	107,944	33·19
1911	36,075,269	133,157	36·91
1912	36,545,076*	135,661	37·12

* Estimated for the middle of the year.

WEDNESDAY, JULY 31ST.

The Inspection of Sanatoriums.

Mr. ASTOR asked the President of the Local Government Board to state whether he had given, or would give, the approval of the Board to sanatoriums for the treatment of insured persons without their having been inspected at some time by an officer of the Local Government Board.—Mr. BURNS replied: I would refer the honourable Member to my reply of Thursday last, in which I stated that the Board had then approved of 11 sanatoriums and other residential institutions for a period of six months, and had communicated with the authorities of 75 other institutions offering to approve of these institutions for a similar period. The great majority of these institutions have been inspected at one time or another by one of the medical officers or inspectors of the Board, and, as regards the remainder, I have sufficient information to justify their being approved for a limited period.

Insurance Act and Domiciliary Treatment.

Mr. ASTOR asked the President of the Local Government Board to state whether domiciliary treatment for insured persons recommended for that form of sanatorium benefit had to be approved by the Local Government Board; if so, whether the Board proposed to issue an order or memorandum dealing with this; and when the order would be circulated.—Mr. BURNS replied: The Local Government Board have already issued an order prescribing the manner of domiciliary treatment of insured persons suffering from tuberculosis, of which they approve for the purpose of Section 16 (1) (b) of the National Insurance Act.

Insured Persons and their Dependents.

Sir CLEMENT KINLOCH-COOKE asked the Secretary to the Treasury whether a boy aged 12 suffering from tuberculosis, the son of an insured person under the National Insurance Act, could receive any benefit under the Act; and, if so, what benefit.—Mr. MASTERMAN answered: Under Section 17 of the Act an Insurance Committee is empowered to extend sanatorium benefit to the dependents of insured persons.

In reply to supplementary questions, Mr. MASTERMAN said it would be open to the Insurance Committee of the district to give sanatorium benefit to the boy in question if and when it liked.

Thirty Sanatoriums Approved.

Mr. ASTOR asked the Secretary to the Treasury whether he would state how many beds in sanatoriums which had been approved by the Local Government Board were now empty and available for insured persons.—Mr. BURNS answered: The Local Government Board have approved of 30 sanatoriums and other residential institutions containing 1172 beds for patients, but I cannot say how many of these beds are now available.

Mr. ASTOR: Are any of these beds available?—Mr. BURNS: Certainly.

Mr. ASTOR: About how many?—Mr. BURNS promised to make inquiry.

Statistics of Sick Benefit Societies.

Lord ROBERT CECIL asked the Chancellor of the Exchequer whether he would state what was the number of members of Friendly Societies and Trade Unions giving sick benefit before the introduction of the National Insurance Bill; what was the number of members now of those societies and unions, or sections thereof, which had been approved, separating in each case the societies from the unions; and what was the number of members of the approved sections formed by industrial insurance companies.—Mr. MASTERMAN replied: I am obtaining further returns from Approved Societies and their branches and approved sections as to the number of their members. It is necessary, however, to circularise about 20,000 societies and branches for the purpose, and as a consequence of pressure in their offices they have in many cases found it impracticable at present to render complete returns.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ADDISON, OSWALD L., F.R.C.S. Eng., has been appointed Assistant Surgeon to the West London Hospital.

ARMOUR, DONALD, F.R.C.S. Eng., has been appointed Surgeon to the West London Hospital.

ATKINSON, J. A., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Newnham District of the county of Gloucester.

BUCKLEY, J. P., F.R.C.S. Eng., has been reappointed Assistant Surgical Officer to the Manchester Royal Infirmary.

CLEMENTS, J. H., L.S.A. Lond., has been appointed Medical Officer to the Winkleigh District by the Torrington Board of Guardians.

D'ESTERRE, J. NORCOTT, L.R.C.P. Lond., M.R.C.S., L.S.M.S.A. Lond., has been appointed Registrar to the Kensington and Fulham General Dispensary, Earl's Court, S.W.

DOUGLAS, W. R., F.R.C.S. Eng., has been reappointed Assistant Surgical Officer to the Manchester Royal Infirmary.

EDWARDS, F. S., F.R.C.S. Eng., has been appointed Consulting Surgeon to the West London Hospital.

GRAY, H. TYRRELL, F.R.C.S. Eng., has been appointed Assistant Surgeon to the West London Hospital.

HALL, F., M.B., Ch.B. Vict., D.P.H. Manch., has been appointed Assistant Medical Officer of Health of the Borough of Derby.

HILL, E. FALKNER, M.B., Ch.B. Vict., has been reappointed Anæsthetist to the Manchester Royal Infirmary.

HOWELL, C. M. HINDS, M.D. Oxon., F.R.C.P. Lond., has been appointed Assistant Physician to Out-patients at the National Hospital, Queen-square, W.C.

JONES, F. WOOD, M.B. Lond., has been appointed Lecturer and Head of the Department of Anatomy at the London School of Medicine for Women.

MACDONALD, S. G., F.R.C.S. Eng., has been appointed Surgical Registrar to the West London Hospital.

MOIR, EDWARD, L.S.A. Lond., has been reappointed Anæsthetist to the Manchester Royal Infirmary.

WESTMACOTT, F. H., F.R.C.S. Eng., has been reappointed Assistant Surgical Officer in the Aural Department of the Manchester Royal Infirmary.

WILLIAMS, IDWAL J., M.B., Ch.B. Liverp., has been appointed Assistant Resident Medical Officer to the Mill Road Union Infirmary, Liverpool.

WOODALL, A. E., M.D. Vict., has been reappointed Medical Officer to the Central Branch of the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, apartments, and washing.

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BARROW-IN-FURNESS, BOROUGH OF.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £250 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board and laundry.

BIRMINGHAM, CITY OF.—Assistant Medical Officer of Health. Salary £250 per annum.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Two House Surgeons for six months. Salary £80 per annum, with board, lodging, and laundry.

BRIXTON DISPENSARY, Water-lane, S.W.—Resident Medical Officer, unmarried. Salary £175 per annum, with apartments, attendance, coal, and gas.

BURSLEM, HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and laundry.

CARDIFF EDUCATION COMMITTEE.—Medical Assistant to School Medical Officer and Medical Officer of Health. Salary £250 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £90 per annum, with rooms, board, washing, and attendance.

CROYDON GENERAL HOSPITAL.—Anæsthetist and Junior House Surgeon. Salary £80 per annum, with board, laundry, and residence.

DARENTH INDUSTRIAL COLONY.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, attendance, &c.

ESSEX INSURANCE COMMITTEE.—Chief Tuberculosis Officer. Salary £600 per annum.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

GOVAN DISTRICT ASYLUM, Crookston, near Paisley.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, board, attendance, and laundry.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £63 per annum, with residence, board, and washing.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary at rate of £60 per annum for six months, or £80 per annum for twelve months, with board and lodging.

KING EDWARD VII. WELSH NATIONAL MEMORIAL.—Tuberculosis Physicians. Salary £400 per annum.

LEAMINGTON SPA, WARNEFORD GENERAL HOSPITAL.—House Physician. Salary £85 per annum, with board, residence, and laundry.

LIVERPOOL CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LIVERPOOL HOSPITAL FOR CONSUMPTION SANATORIUM, Kingswood, Delamere Forest.—Resident Medical Officer. Salary £400 per annum, with house.

LURGAN UNION WORKHOUSE AND FEVER HOSPITAL, Ireland.—Resident Medical Officer (female). Salary £80 per annum, with apartments, laundry, and rations.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for In-patient Department, Bowdon, Cheshire. Salary £100 per annum, with board, apartments, washing, &c. Also Assistant Medical Officer for Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Senior House Surgeon. Also Junior House Surgeon. Salary £120 and £100 per annum respectively, with apartments and board.

MIDDLESEX EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum, &c.

MILDMAY MISSION HOSPITAL, Bethnal Green, E.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary £200 per annum, with board and residence.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Also Assistant. Salary of former £180 and of latter £160 per annum, with apartments, attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and washing.

PERTH DISTRICT ASYLUM, Murthly.—Assistant Physician. Salary £120 per annum, with board, laundry, and attendance.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Medical Officer in Charge of Electrical Department. Salary £100 per annum.

RAMSGATE GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen appointments.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £100 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

ST. THOMAS'S HOSPITAL.—Chemical Pathologist.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with residence, board, and allowance for laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £65 and £60 per annum respectively, with board, lodging, and washing. Also Two Honorary Assistant Surgeons.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £70 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SOMERSET COUNTY COUNCIL.—Tuberculosis Medical Officer. Salary £500 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, and washing.

STOCKPORT INFIRMARY.—Two Junior House Surgeons. Salary £80 per annum, with board, washing, and residence.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £90 per annum, with board, residence, and laundry.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Non-resident Casualty Officer for six months. Salary at rate of £50 per annum and lunch daily.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, and attendance

YORK COUNTY HOSPITAL.—House Surgeon for six months. Salary at rate of £100 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Calstor, in the county of Lincoln; at Greyabbey, in County Down; and at Saintfield, in County Down.

Births, Marriages, and Deaths.

BIRTHS.

RIDOUT.—On July 27th, at Southsea, Hants, the wife of C. A. Scott Ridout, M.S., M.B. Lond., F.R.C.S. Eng., of a son.

STOTT.—On July 28th, at Addison-road North, W., the wife of Arnold W. Stott, M.A., L.R.C.P., of a daughter.

WEBB JONES.—On July 23rd, at Alexandria, Egypt, the wife of Arthur Webb Jones, M.B., B.S., F.R.C.S., of a daughter.

MARRIAGES.

MAYER—DOUGLAS.—On July 27th, at Christ Church, Hornsey, William Lewin Mayer, L.R.C.P., M.R.C.S., L.M., to Bessie Douglas, only daughter of George Banks, J.P., of Broughton, Hants.

WENHAM—ANGUS.—On July 25th, at Heath-street Chapel, Hampstead, Herbert Victor Wenham, M.B., F.R.C.S., to Margaret Elizabeth Angus, only daughter of Charle J. Angus, of Church-row, Hampstead.

DEATHS.

GRABHAM.—On July 23rd, at Mathyns, Witham, Essex, George Wallington Grabham, M.D. Lond., aged 75 years.

GREAVES.—On July 7th, at Barbados, West Indies, Herbert Stanle Greaves, B.A., M.R.C.S. Eng., L.R.C.P. Lond, aged 38 years

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Short Comments, and Answers to Correspondents.

"TRUE MORALITY."

A Certified Midwife sends us a copy of a pamphlet, entitled "True Morality," purchased in Wigan in mistake for another book bearing the same title. Our correspondent says that in her practice for over 30 years as a qualified midwife she has seen sad results from the knowledge such books impart. The book consists partly of a series of quotations from all sorts of sources intended to sustain, either directly or indirectly, the practice of preventing conception, and partly of advertisements, some of a character that at one time used to figure on public urinals in London and other large cities. The *raison d'être* of the book is clearly to be found in the latter part.

"WAIT AND SEE."

To the Editor of THE LANCET.

SIR,—This now historic phrase, so applicable to the present condition of affairs in the medical world, was clearly long ago anticipated by Chateaubriand, the last verse of whose poem, entitled "*Nous Verrons*," reads as follows:—

Nous verrons est un mot magique
Qui sert dans tous les cas fâcheux.
Nous verrons, dit le politique;
Nous verrons, dit le malheureux.
Les grands hommes de nos gazettes,
Les rois du jour, les fanfarons,
Les faux amis et les coquettes,
Tout cela vous dit: Nous verrons.

I am, Sir, yours faithfully,

London, July 29th, 1912. BLANCUS.

A BLAKE SOCIETY.

MANY members of the medical profession will learn with interest that a Blake Society has been formed. The first meeting will be held at "Wyldes," North End, Hampstead, on August 12th, when papers will be read by Dr. Greville MacDonald, Dr. H. J. Norman, and others. Blake's life presents many curious psychological problems. The secretary of the new society is Mr. Thomas Wright, Cowper School, Olney, Bucks.

TUBERCULIN DISPENSARY LEAGUE.

THE annual general meeting of this association was held at 3, Stratford-place, London, W., on Wednesday, July 17th, by the permission of the Countess of Mayo, the President, who took the chair. The honorary secretary read a comprehensive report, detailing the pioneer work done, and the honorary treasurer said that the balance-sheet showed a balance in hand of £138 19*s.* 4*d.* Dr. Camac Wilkinson read a medical report, in which he said that the aim of the association was to win the medical profession to their views, when the public would follow. Dr. Annie McCall moved the adoption of the reports. Mr. Vaughan Barber seconded, with an account of work done, and Dr. John Mackeith supported by his words the statements of Dr. Wilkinson, who, later, said that the accommodation at Kennington-road being limited, the secretary to the Prince of Wales's Hospital had offered to consider plans for the building of a new dispensary.

HOLIDAY GUIDES.

To those who have not yet decided where to go for the annual holiday, "The Holidays: Where to Stay and What to See," an official directory of the holiday resorts served by the Midland, London and North-Western, Great Northern, Great Eastern, Great Western, and Great Central Railway Companies (London, Messrs. Walter Hill, 1912, price 1*s.*) should prove useful. It contains a large amount of information and several good maps. We have also received certain guides published by local corporations, which can usually be obtained from those bodies by application on a postcard to the town clerk. These are guides to Bembridge and to Ventnor in the Isle of Wight, to Deal, and to Llandrindod Wells. These guides are well illustrated, and answer most of the questions that are likely to present themselves to the mind of the prospective visitor.

AN INGENIOUS CIGARETTE HOLDER.

WE have received from Dr. J. D. T. Reckitt, of 95, Talgarth-road, West Kensington, a cigarette holder ingeniously constructed out of wire twisted in a series of loops somewhat after the fashion of a lazy tongs, intended for those who do not like a tube holder. All holders prevent the staining of the fingers, but Dr. Reckitt claims further for his holder that it does not spoil the taste of the cigarette as most tubes do, that it adapts itself automatically to cigarettes of all sizes, is light and compact, and suited to the waistcoat pocket or the watch-chain, for it can be made out of any wire, including gold or silver. Moreover it can be used as a rest by placing it flat on a table with the lighted end of the cigarette pointing upwards.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for August, September, and October:—

May to October (London, Earl's Court).—Shakespeare's England.
July 29th–August 3rd (York).—Congress and Exhibition of the Royal Sanitary Institute.
,, 29th—August 3rd (The Hague).—Second International Moral Education Congress.
Aug. 5th–10th (Oxford).—Second International Congress of Entomology.
,, 6th–10th (Düsseldorf).—Third International Medical Congress on Industrial Accidents.
,, 6th–27th (Balkans, Turkey, Greece).—Ninth Annual Congress of the Association Internationale de Perfectionnement Scientifique (A.P.M.).
7th–10th (Glasgow University).—Thirty-second Annual Meeting of the British Dental Association.
,, 8th–30th (Central Europe).—Medical Study Tour ("A.P.M."), starting at Besançon.
,, 10th–14th (Edmonton and Calgary, Alberta).—Annual Meeting, Canadian Medical Association.
,, 11th–18th (Cracow).—Eighth Esperanto Congress.
,, 12–17th (Boston, U.S.A.).—Ninth International Otological Congress.
,, 24th–Sept. 9th (Toronto).—Canadian National Exhibition.
August (Harvard University, Cambridge, Mass.).—Ninth International Otological Congress.
Sept. 1st–14th (France).—Voyage d'Etudes Médicales.
,, 2nd–7th (Wrexham).—Welsh National Eisteddfod.
,, 4th (Washington, D.C.) and Sept. 6th–13th (New York). Eighth International Congress of Applied Chemistry.
,, 4th–11th (Dundee).—British Association.
,, 8th–11th (London, Royal Agricultural Hall).—Dairy Show.
,, 9th (probable opening date) (Geneva).—International Congress of Anthropology and Prehistoric Archeology.
,, 9th–10th (San Sebastian).—Third Spanish Congress of Tuberculosis.
,, 10th–12th (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
,, 15th–21st (Münster).—Eighty-fourth Meeting of the German Association of Scientists and Medical Practitioners.
,, 23rd–25th (Toulouse).—"Cold" Congress. (Cold Storage and Cryologic Methods.)
,, 23rd–28th (Washington, D.C.).—Fifteenth International Congress on Hygiene and Demography.
,, 27th–29th (Hamburg).—Sixth Annual Meeting of the German Society of Specialists in Nerve Diseases.
,, (Toronto).—Second Annual Meeting, Canadian Public Health Association.
September or October (Perth, Western Australia).—(Three days.) Health Congress.
Oct. 3rd and 4th (Columbia, South Carolina).—National Conference on Pellagra.
,, 9th–12th (New York).—Electrical Exposition and Automobile Show.
,, 10th–13th (Meran).—Seventh Austrian Congress of Balneologists
,, 13th–16th (Paris).—Thirteenth French Congress of Medicine.
,, 17th–23rd (Paris).—First International Congress of Comparative Pathology.
,, 29th–Nov. 2nd (London, Royal Horticultural Hall).—Twenty-third Universal Cookery and Food Exhibition.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 31st, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 25	29·81	S.W.	...	121	77	64	63	67	Cloudy
,, 26	29·94	S.	...	121	75	59	60	65	Cloudy
,, 27	29·67	S.W.	0·06	127	77	64	63	68	Cloudy
,, 28	29·62	S.W.	...	105	67	59	61	64	Cloudy
,, 29	29·63	S.W.	0·13	102	63	57	58	60	Raining
,, 30	29·64	S.W.	0·23	120	70	56	56	61	Cloudy
,, 31	29·78	S.W.	...	76	60	54	54	58	Cloudy

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's 1.30 P.M.), Children, Gt. Ormond-street (9 A.M.) St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2. P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.) Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M.), Aural, (2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (10th).—Royal Free (9 A.M), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1912, which was completed with the issue of June 29th, were given in THE LANCET of July 6th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1912 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

The following journals, magazines, &c., have been received.—Journal of Physiology, School Hygiene, Man, Annales de l'Institut Pasteur, Canadian Practitioner, Journal of Nervous and Mental Diseases, Journal d'Urologie, Medico-Surgical Journal of the Tropics, Dominion Medical Monthly, Revue d'Hygiene, Medical Review of Reviews, Revue de Psychiatrie, Archives of Internal Medicine, Archivos Brasileiros de Medicina.

Communications, Letters, &c.; have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Messrs. Adlard and Son, Lond.; Dr. E. L. Ash, Lond.; Dr. G. F. Alexander, Folkestone; Ashton-under-Lyne District Infirmary, Secretary of; Mrs. Armstrong, Lond.; *American Journal of Clinical Medicine*, Chicago, Editor of; *Advertising*, Lond., Editor of; Anglo-American Pharmaceutical Co., Lond.; Messrs. Arnold and Sons, Lond.

B.—Briton Motor Co., Wolverhampton; Birmingham Corporation, Medical Officer of Health to the; Barrow-in-Furness Corporation, Clerk to the; Messrs. F. W. Berk and Co., Lond.; Dr. T. Graham Brown, Liverpool; Dr. F. G. Bushnell, Worthing; Mr. F. Bracht, Southsea; Bristol Education Committee, Secretary of; Dr. B. Blacklock, Glasgow; Dr. W. Broughton-Alcock, Paris; British Medical Association, Lond., Librarian of; Lady Butlin, Lond.; Dr. G. A. H. Barton, Lond.

C.—Messrs. Samson Clark and Co., Lond.; C. T. H.; Dr. G. H. Clark, Glasgow; Cable Printing and Publishing Co., Lond.; Mr. Kenneth Campbell, Lond.; Dr. F. G. Crookshank, Lond.; Dr. I. Gelkie Cobb, Lond.; Dr. N. Campbell, Norwich; Dr. H. Warren Crowe, Yelverton; Coventry and Warwickshire Hospital, Coventry, Secretary of.

D.—Messrs. W. Dawson and Sons, Lond.; Messrs. Darlington and Co., Llangollen; *Democrazia*, La Redazione della, Ripa; Dr. A. Duncan, Lond.; Dr. Charles H. Duncan, New York; Dr. Alexander Duncan, Glasgow.

E.—Essex Insurance Committee, Chelmsford, Clerk to the; Messrs. T. Eggar and Co., Brighton; Mr. F. C. Barlow Eberhardt, Wylde Green; Dr. F. W. Edridge-Green, Lond.; Mr. J. H. Evans, Lond.; Mr. C. A. Ellis, Maidenhead; Lieutenant-Colonel R. H. Elliot, Madras.

F.—Mr. H. S. Freeman, Staines; Messrs. Ferris and Co., Bristol; Messrs. Fairchild Bros. and Foster, Lond.; Major H. C. French, R.A.M.C., Lond.; Mr. J. Gay French, Lond.; Mrs. H. French, Lond.

G.—Glasgow Royal Infirmary, Superintendent of; Dr. W. Gauld, Lond.; Dr. E. M. Gray, Lagos; Mr. H. J. Gauvain, Alton; Dr. A. S. Gubb, Monnetier-Mornex; Grahame-White Aviation Co., Lond.; Dr. H. M. W. Gray, Aberdeen; Dr. A. G. Gibson, Oxford; Messrs. Greening and Co., Lond.

H.—Mr. W. L. Hampton, Perth; H. B.; Dr. Alexander Haig, Lond.; Henry Phipps Institute, Philadelphia; Mr. John Hatton, Bath; Dr. W. Jobson Horne, Lond.; Health Department, Lincoln; Fleet-Surgeon W. E. Home, R.N., Victoria, British Columbia; Dr. J. C. Hibbert, Warrington; Hoffmann-La Roche Chemical Works, Lond.; Howard and Richard Howard Charity, Burslem; Dr. Æneas Henderson, Southport.

I.—Incorporated Institute of Hygiene, Lond., Secretary of.

J.—Messrs. J. F. Jones and Co., Lond.; Mrs. Johnston, Lond.; Mr. Ian Jefferiss, Gillingham; Dr. Hugh R. Jones, Liverpool.

K.—Kensington and Suburban General Hospital, Lond., Secretary of; Mrs. Kefford, Tottenham; Messrs. S. Kutnow and Co., Lond.; Dr. W. W. Kennedy, Calcutta; Captain H. C. Keates, I.M.S., Dera Ghazi Khan; Mr. P. E. Kingsford, Ellesmere Port; King Edward's Hospital Fund for London, Hon. Secretaries of; Kaiserliches Gesundheitsamt, Berlin; King Edward VII. Hospital, Cardiff, Secretary of; Messrs. G. Kelly and Co., Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Mr. H. K. Lewis, Lond.; The Liverpool Lint Co., Manager of; Dr. Charles D. Lockwood, Pasadena; Dr. John T. Leon, Southsea; London (Royal Free Hospital) School of Medicine for Women, Secretary and Warden of; Mrs. Wakeman Long, Lond.; Dr. P. W. Latham, Moffat.

M.—Medical Correspondence College, Lond., Secretary of; Messrs. F. Mundy, Gilbert, and Co., Birmingham; Medicus, Bury; Medical Society of London, Lond., Registrar of; Messrs. C. Mitchell and Co., Lond.; Mr. W. St. C. McClure, West Didsbury; Dr. Macleod Munro, Maidenhead; Manchester Hospital for Consumption, Secretary of; Mr. R. Mosse, Berlin; Medical Graduates' College and Polyclinic, Lond., Secretary of; Middlesex Hospital Medical School, Lond., Dean of; Sir Henry Morris, Bart., Lond.; Metropolitan Hospital Sunday Fund, Lond., Secretary of; Dr. D. J. Mangan, New York; Manchester Royal Infirmary, General Superintendent and Secretary of; Mr. J. Murray, Lond.; Messrs. Maple and Co., Lond.; Manchester Northern Hospital, Secretary of.

N.—Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.; Nottingham General Hospital, Secretary of; Nottingham General Dispensary, Secretary of; National Library of Wales, Aberystwyth, Librarian of; National Food Reform Association, Lond.

O.—Messrs. Osborne-Peacock Co., Manchester; Captain P. L. O'Neill, I.M.S., Bellary.

P.—Plasmon Tea Co., Lond.; Dr. A. J. Powell, Cheltenham; Poplar Medical Union, Hon. Secretary of.

Q.—Queen's University, Belfast, Secretary of; The Queen's Hospital for Children, Lond., Secretary of,

R.—Royal Victoria Eye and Ear Hospital, Dublin, Secretary of; Messrs. Robertson and Scott, Edinburgh; Royal Victoria and West Hants Hospital, Bournemouth, Secretary of; Dr. J. W. Rob, Weybridge; Royal Institution of Great Britain, Lond.; Mr. David D. Robertson, Lond.; Ramsgate General Hospital, Secretary of; Mrs. Edward Ritchie, Chandler's Ford; Dr. H. B. Roderick, Cambridge; Mr. W. S. Randall, Lond.; Randall's Advertising Agency, Liverpool; Mr. T. Conrad Reeves, Alfriston.

S.—Messrs. W. J. S. and J. A. S. Scott, Newcastle-on-Tyne; Stafford County Asylum, Medical Superintendent of; Sheffield Royal Hospital, Secretary of; Messrs. R. Sumner and Co., Liverpool; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Messrs. G. Street and Co., Lond.; Messrs. Spiers and Pond, Lond.; Sir John Sandys, Cambridge; Mr. Henry L. Smith, Lond.; Mr. E. H. Sweet, Uckfield; Mr. J. E. Scott, Lond.; Sanitary Inspectors Examination Board, Lond., Hon. Secretary of; Dr. Albert B. Stein, Wiesbaden; St. Mary's Hospital for Women and Children, Plaistow, Secretary of; Somerset County Council, Weston-super-Mare, Clerk to the; Scarborough Hospital and Dispensary, Secretary of; Salford Royal Hospital, Secretary of; Scholastic, Clerical, and Medical Association, Lond.; Mr. W. Summerskill, Westgate-on-Sea; Captain G. C. Sturrock, R.A.M.C., Lond.

T.—Mr. P. Templeton, Southsea; Messrs. W. Thacker and Co., Lond.; Dr. M. L. Tyler, Lond.; Professor William Thorburn, Manchester; T. J.; Madame Thoumaian-Rossier de Visme, Chigwell; Messrs. Tindall and Jarrold, Chelmsford; The Tuberculin Dispensary, Lond., Secretary of.

U.—University of London, Principal of; University of London, Secretary to the Establishment and General Purposes Committee of.

V.—Messrs. Van Houten, Lond.

W.—Dr. S. L. B. Wilks, Colwyn Bay; Mr. F. Wilson, Lond.; Mr. A. Wilson, Lond.; Mr. D. K. Whitlock, Southampton; Dr. Claude L. Wheeler, Brooklyn; Dr. H. W. Wilson, Glasgow; West Bromwich District Hospital, Secretary of; Mr. A. W. White, Kingsgate-on-Sea.

Y.—Mr. M. Yearsley, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. M. Atkinson, Lond.; Messrs. J. Archibald and Co., Hull; Mr. E. Arnold, Lond.; Dr. R. C. Affleck, Cheltenham; Apollinaris Co., Lond.; A. M. P.

B.—Mr. C. A. G. Browne, Lond.; Sir W. R. Broughton, Bart., Lond.; Mr. G. P. Butcher, Plymouth; Messrs. Burroughs Wellcome and Co., Lond.; Barnsley Hall Asylum, Bromsgrove, Clerk to the; Bradford Union, Clerk to the; Birmingham, &c., Throat Hospital, Secretary of; Mr. A. C. Butler-Smythe, Lond.; Professor F. A. Bainbridge, Stocksfield-on-Tyne; Mr. E. Blatchley, Lond.; B. J. P. J.

C.—Mr. G. S. Crisford, Swindon; Messrs. J. and A. Carter, Lond.; Dr. A. Cory, Egerton, Australia; Croydon Mental Hospital, Treasurer to the; Canterbury Borough Asylum, Clerk to the; C. A. F.; Dr. H. P. Collings, Brighton; Messrs. Carnrick and Co., Lond.; Miss M. E. Crook, Lond.

D.—Dr. W. T. Dougal, Pittenweem; Mr. E. W. Dewey, Portsmouth; Messrs. Duncan, Flockhart, and Co., Lond.; Dr. S.; Durham County Hospital, Secretary of; Mr. R. W. Doyne, Lond.

E.—E. O. C.; E. W.

F.—Miss Francis, Lond.; F. J. P.

G.—Mr. V. Graham, Doncaster; Messrs. Gale and Co., Lond.; Dr. J. G. Gordon-Munn, Norwich; Dr. S. Gill, Formby; Messrs. Gilyard Bros., Bradford; Gloucestershire Royal Infirmary, Gloucester, Secretary of; Galen Manufacturing Co., Lond.

H.—Mr. T. H. Hewitt, Lond.; Messrs. Hogg and Sons, Lond.; Messrs. Hastings Bros., Lond.;

J.—Dr. J. Jeffrey, Jedburgh; Fleet-Surgeon A. H. Jeremy, R.N., Bournemouth; J. A. B. T.; Mrs. R. M. Johnston, Cambridge; Joint Counties Asylum, Carmarthen, Clerk to the.

K.—Messrs. King and Co., Lond.

L.—Dr. T. S. Logan, Exminster; Leeds General Infirmary, Treasurer to the; Liverpool Medical Agency, Manager of; Messrs. Lee and Martin, Birmingham; Leicester Royal Infirmary, Secretary of; Liverpool Royal Infirmary, Secretary of.

M.—Mr. J. Milner, Bournemouth; Mr. W. J. Moore, Glasgow; Mr. M. Millington, Basingwold; Messrs. J. Menzies and Co., Edinburgh; Dr. D. M. MacRae, Victor, Orange Free State; Dr. C. R. P. Mitchell, Malvern; Dr. D. R. Mitchell, Garndiffaith; Messrs. Masson et Cie, Paris; Dr. W. J. Morrish, Lond.; Messrs. F. G. Moore and Co., Lond.; Maltine Manufacturing Co., Lond.; Messrs. J. Maclehose and Sons, Glasgow.

N.—Dr. Niel, Oxford; N. R. D.

P.—Portsmouth Education Committee, Clerk to the; Dr. W. P. Pankridge, Petersfield; Dr. F. S. Pitt-Taylor, Blackpool; Messrs. Pratt and Co., Manchester.

Q.—Queen Alexandra Sanatorium, Davos, Assistant Secretary of.

R.—Mr. C. H. H. Robinson, Lond.; Royal Hampshire County Hospital, Winchester, Secretary of; Radcliffe Infirmary, Oxford, Secretary of; Miss L. Rattray, Haslemere; Messrs. Richardson and Co., Lond.; Messrs. Roberts and Co., Lond.

S.—St. Andrew's Hospital, Northampton, Clerk to the; Mr. H. Sewill, Redhill; Sheffield University, Registrar of; St. Mary's Hospitals, Manchester, Secretary of.

T.—Dr. J. L. Timmins, Lond.

U.—Universal Agency, Lond.

V.—Messrs. J. W. Vickers and Co., Lond.

W.—West London Hospital, Dean of; W. B.; Wolverhampton, &c., General Hospital, Secretary of; Mr. G. B. M. White, Lond.; Warrington Infirmary, Secretary of; Woolwich Tuberculosis Dispensary, Treasurer to the; West-End Hospital for Nervous System, Lond., Secretary of; Messrs. Wander, Lond.; Messrs. F. Williams and Co., Lond.; Warneford, &c., Hospital, Leamington, Secretary of.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications	Five Lines and under £0 4 0
Official and General Announcements	
Trade and Miscellaneous Advertisements and Situations Vacant ...	Every additional Line 0 0 6

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*
Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*
Special Terms for Position Pages.

Cheques and Post Office Orders (crossed "London County & Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.